THE LANCET.

VOL. II.] LONDON, SATURDAY, AUGUST 2, 1834. [1833-34.

UNIVERSITY OF LONDON.

LECTURES
ON
COMPARATIVE ANATOMY
AND
ANIMAL PHYSIOLOGY,

DELIVERED BY

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LECTURE XLI.

ON THE DIGESTIVE ORGANS OF THE RADIATED OR CYCLO-NEUROSE ANIMALS.

AN animal is but a moving bag which converts organic matter into its own likeness, and all the complex *organs of animal life* we have been hitherto considering are but subservient to this digestive sac. The *bones*, connected together by their *ligaments*, are but the solid levers which enable the *muscles* to carry it to and fro, and the *nervous system*, with its various *organs of sense*, serves but to direct its motions in quest of food. Nature has placed the unorganized food of plants on the exterior of their body, and their vessels are sent there to seek it, which roots them through life to a fixed point; but animals place their food in their stomach, and having their roots directed towards that central reservoir, they can move about and select what is most congenial to their nature. The organs of *animal life* relate to this difference between the two organized kingdoms, to this locomotion of animals and their power of selecting their food; but the *organs of vegetative life* which we are now to examine, relate merely to the assimilation of food when within the body, and are therefore common to animals with plants. The digestive surface of the plant is the surface of its root, ramified and fixed in the soil, which affords it a never-failing supply of food, so that the vegetable is like an animal with its stomach turned inside out. We have seen that the *organs of relation*, which are necessarily connected with the varied circumstances in which animals are placed, are remarkable for their variable character, and even for their inconstancy in the lower tribes, where they are often entirely wanting; but those of *vegetative* or *organic life* are more regular and constant in their character; and, indeed, no organ is more universal among animals than that internal digestive cavity by which they differ so much from the species of the vegetable kingdom. This primitive sac is but a development of the skin, which extends into the homogeneous cellular tissue of the body, or through it; and although in the simplest conditions of animals, it performs alone all the assimilative functions, we find it, as we ascend in the scale, giving origin to various other systems to which distinct parts of the complex function of assimilation are entrusted. Thus the peripheral mode of nutrition of the plant passes insensibly into the central internal mode of the animal, and all the organs of organic life, whether they open into the digestive cavity within, or on the surface of the body without, may be considered as originating from the skin, which is itself only a portion of the primitive cellular tissue of the body, here modified by the contact of the surrounding element, so as to assume the character of a mucous membrane. As the various tubular prolongations become more and more developed and isolated from this primitive source, they assume properties more and more peculiar, and thus form the numerous glandular apparatus and vascular systems.

An internal digestive cavity, the first element of all the organs subservient to individual nutrition, is observed in every class of animals and almost in every genus, and even where this part has not been perceived, there can be little doubt, from

analogy, of its existence. Its form and structure vary according to the kind of food on which animals are destined to subsist, and the extent of elaboration it requires to undergo to assimilate it to the animal's body; so that the diversities of this digestive apparatus are intimately related to all the living habits of animals, and to all the peculiarities of form presented by the organs of animal life we have been hitherto examining.

An internal digestive apparatus is seen in the *monads*, and in all the higher forms of animalcules, where the internal cavities connected with this system are so numerous in all the genera, that this lowest of animals has been termed *polygastrica*, to express this common character. From the transparency of these minute animals, their digestive sacs appear when empty, or when filled with water, like portions of the cellular substance of the body, or like animalcules which have been swallowed, or like internal gemmules; and from not being generally recognised, many were led to suppose that the animalcules were nourished by superficial absorption, like marine plants. Lewenhoeck, however, not doubting that they possessed a stomach, believed they devoured each other; the same was observed also by Ellis, and Spallanzani maintained that they devoured each other so voraciously, that they were seen to become distended with this food. Goeze saw the *trichoda* seizing and swallowing animalcules smaller than itself. Baron Gleichen, in order to discover the form of their internal digestive cavities, placed them in infusions coloured with carmine, which they soon swallowed, and you will observe in these coloured plates that he has represented this red colouring matter as filling the internal stomachs of numerous *trichodæ*, *vorticellæ*, and other animalcules. Indeed you will see those internal globular cavities of animalcules represented in the plates of Muller, Bruguiere, and all the older writers on this class. But Ehrenberg, by adopting the plan of Gleichen and Trembley of employing opaque colouring matter to detect the forms of these internal cavities, and by using principally carmine, sap-green, and indigo, carefully freed from all impurities which might prevent their being swallowed, has succeeded better than all his predecessors in unfolding the structure of the digestive organs of animalcules. Such coloured organic matter, diffused as fine particles mechanically suspended in the water in which animalcules are placed, is readily swallowed by them, and renders visible, through their transparent bodies, the form and disposition of their alimentary cavities; but however long they remain in these coloured infusions, with their stomachs distended with the colouring matter, it is not perceived to communicate the slightest tinge to the general cellular tissue of their body. In most of the animals of this class there is an alimentary canal, with an oral and an anal orifice, which traverses the body, and is provided with numerous small round cæcal appendices, which open into its sides throughout its whole course, and which appear to perform the office of stomachs in receiving and preparing the food. In the simplest forms of animalcules, however, there is but one orifice to the alimentary cavity, and the numerous cæcal appendices open into this general wide orifice, placed at the anterior extremity of the body. This simpler form of this digestive apparatus is found in the *monads*, and in about forty other known genera of polygastrica, which, from this circumstance of their having no intestine passing through their body, have been grouped together as an order, under the name of *anentera*. In the *monas termo*, which is only about the two-thousandth of a line in diameter, four of these round stomachs have been seen filled with the colouring matter, although they did not appear to be half the number which might be contained in its body. Each of these round stomachs was about one six-thousandth of a line in diameter, and they appear to open, as in other *anentera*, by a narrow neck into a wide funnel-shaped mouth, surrounded with a single row of long vibratile cilia, which attract the floating organic particles, or minuter invisible animalcules, as food. This anenterous form of the digestive sacs is found both in the loricated and in the naked kinds of animalcules belonging to the lowest genera of the class, many of which, however, have been found to be only the young of suppored higher genera.

The intestine which traverses the interior of the body in all the higher forms of polygastric animalcules, and connects all the internal stomachs with its cavity, presents very different appearances in different genera, and even in different species of the same genus. In this *vorticella citrina*, the intestine, you observe, passes downwards from the mouth, of equal width throughout, and, after forming a curve in the lower part of the body, it ascends to terminate at the same oral funnel-shaped ciliated aperture at which it commenced, having numerous cæcal stomachs communicating with its cylindrical equal canal throughout its whole course. This circular form of intestine, opening at both its extremities in the same ciliated aperture, is seen also in the *carchesium*,

zoocladium, *epistylis*, *ophrydium*, *vaginicola*, and other genera, which, from this character, are termed cyclo-cœla. In some of the animalcules of this group, as you see in this *stentor polymorphus*, the intestine, pursuing the same circular course through the body, is sacculated, or regularly dilated into round vesicles, throughout its whole length, and from these enlarged parts the little stomachs commence. In other species of the *stentor*, the intestine is twisted in a spiral manner throughout its circular course. Many of the polygastric animalcules which approach nearer to the helminthoid classes in the lengthened form of their body, have the mouth and anus placed at the opposite extremities, as in these higher classes. In the long body of this *enchelis pupa*, you perceive the intestine passing straight and cylindrical through the body, from the wide ciliated terminal mouth, to the opposite dilated anal termination, and giving off numerous small sacs along its whole course. Such animalcules form the group termed *ortho-cœla*, from this straight course of the intestine. The intestine, however, in the *leucophrys patula*, passes in a spiral course through the short and broad body of the animalcule, giving off cæca along its whole length, and such crooked forms of the alimentary canal compose the group of *campylo-cœla*. Thirty-five genera of polygastrica present an intestine passing through their transparent body, and developing from its parietes these minute globular cæca, which have been regarded as stomachs, from the quickness with which the animalcule conveys the food into them, and from its not accumulating or retaining its food in any other part of the digestive apparatus. Nearly two hundred of these stomachs have been seen in the *paramœcium* and *aurelia*, filled at the same time, and there may have been many more unseen from their empty and collapsed state. These little sacs are contracted, filiform, and almost invisible when empty, but they are susceptible of great dilatation, and are sometimes seen filled with water, or distended with smaller animalcules seized as food. Viewed through the microscope, these minute animals present very different appearances, according to the quantity and kind of food contained in their cæcal appendices, and from this circumstance twelve different species of animalcules, belonging to six supposed distinct genera, have been formed of the single *vorticella convallaria*. No teeth for mastication, nor any glandular organs to assist in digestion, have been observed in the polygastric animalcules; and, notwithstanding their almost invisible minuteness, and the great simplicity of their structure, they appear to be the most numerous, the most active, the most prolific, and the most voracious, of all living beings.

The poriferous animals present a digestive system, which, by its form and simplicity, approaches the nearest to that of plants. The cellular tissue of their body is permeated in all directions by anastomozing and ramifying canals, which begin by minute superficial pores closely distributed over every part, and terminate in larger orifices variously placed according to the form of the entire animal. The pores are provided with a gelatinous network and projecting spicula to protect them from the larger animalcules and floating particles. The internal canals, like the venous system, leading from capillaries to trunks, are bounded by a more condensed portion of the general cellular substance of the body, and are incessantly traversed by streams of water, passing inwards through the minute pores, and discharged through the larger orifices or vents, but no polypi or cilia have been observed in any of those parts, although from analogy we might suppose them necessary. In this structure there appears to be only an increased extent given to the general absorbent surface; there are no distinct stomachs, or cæca, or other parts for receiving and retaining the aliment that has been taken into the body along with the currents of water. Those animals in their earliest, free, and moving condition, present no cavities in their body, while they are in the state of gemmules, and even for a time after their development has commenced. Neither the poriferous nor the polypiferous animals present the least trace of any internal cavity, while they are in this state of moving ciliated gemmules. As their development proceeds, however, we observe distinctly in these porifera minute openings forming on the surface of the body. Those openings, extending gradually through the body, produce internal canals which terminate in the vents at fecal orifices. From the incessant streams that are conveyed through the bodies of these animals, it appears that all parts of these interior perforations, as well as the general external surface of this cellular tissue, serve for the conveyance of nutritious matter into the interior substance of the body. On watching the streams of water that issue from those fecal orifices, we observe minute flocculent particles that are incessantly detached and thrown out, which appear as if they were the residue of digestion, or pellicles excreted from the body, and thrown off from the surface of internal canals. The same kind of excretion in

thin pellicles takes place on the general surface of zoophytes, which possess no distinct anus separate from the mouths of the polypi.

In the spreading sessile species of porifera, both the pores and the fecal orifices are necessarily placed upon the same general external exposed surface, the other surface of those animals being fixed to the rock, or other submarine bodies. In the tubular species, the pores open over all parts of the outer circumference or periphery of the body. Those pores, in such species, lead to canals which pass generally in an oblique direction, upwards, through the parietes, to the general internal tubular cavity, which is always shut at its upper fixed extremity, and open at its lower free pendent part. The vents or fecal orifices in these hollow poriferous animals are, therefore, only seen upon breaking open those tubular parietes, and observing the surface of their interior cavity (*Fig. B*, 4, *b*, Vol. I. p. 199). The streams of water, therefore, conveyed inwards and upwards through the pores and short canals, rush from those interior concealed fecal orifices into the general cavity of the body, and from that through the opening at the bottom (*Fig. B*, 4, *d*). In the branched species of those animals, which, from their softness, always hang downwards, the whole surface of the body is closely studded with minute pores leading into the interior. From those pores the ramified and anastomozing canals pass inwards, precisely as in the sessile spreading species, through all parts of the interior texture, and open outwardly, upon the same general external surface with the pores, in those large round fecal orifices which you now see ranged along the margins of all the branches. There is great regularity and obvious intention in the disposition of those fecal orifices. They are always situate in such a way as least to incommode the pores, by the discharges which constantly issue from them. They are seen here opening upon the narrow margin of all those ramifications. Frequently we observe these large vents extending a little outwards in the form of papillæ, so that the excrementitious matter and foreign particles conveyed into the body with the water through the pores, may not be thrown out, so as to fall again into the pores through which the streams are incessantly rushing inwards.

In the *polypiferous* animals the digestive apparatus has arrived at a more complex structure; there we observe the margins of the superficial pores lengthened out to form little stomachs or polypi to select and seize and digest animalcules. We observe still, however, in those plant-like animals some extremely simple forms of the alimentary canal. In the little *hydra* or fresh-water polypi, we observe nothing but a digestive sac, thin, soft, cellular, without any cæca or stomachs, like those of polygastrica,—even without a distinct anus separate from the mouth, a mere digestive cavity that possesses everywhere the same properties, and that is capable of performing its functions, whether we turn it inside out, or allow its usually inner surface to remain internal. The similarity of the properties possessed by all parts of those animals, is manifested by what results from dividing them into parts. We observe that each of the separated minute portions of the body, develops to the form of the entire animal. The hydræ feed chiefly upon larvæ of insects and red-blooded worms, which they seize by means of the long fleshy filaments or tentacula developed from the sides of the mouth. They seize and swallow animals many times the size of their own body. You will observe them often conveying a large worm into this sac, stretching the sac over the doubled worm, like a thin elastic membrane, so as entirely to disfigure their body from its ordinary shape; and so transparent do they render themselves by this stretching of their sac, that you cannot see the body of the polypus without, but only the contained worm, with its red blood, as if spontaneously coiled up, without perceiving that there is a thin stretched sac enveloping it. When we watch the process of digestion in those fresh-water polypes, we observe the red fluid in the animal on which they are feeding to pass slowly through all parts of the parietes of the stomach,—that it passes into the arms, showing that these tentacula are here tubular, as in an actinia. The outer surface of their body, however, is as much digestive as the internal. This shows not only that the cellular texture of their body is, in every part, possessed of the same vital properties, but it also already points out the analogy between the skin covering the surface of the body of animals, and the mucous lining of the alimentary canal. They are, in fact, continuous portions of the same texture. The digestive surface, when the body of the *hydra* is turned outside in, becomes the generative surface, for it is still observed in this inverted state to bud from the then outer surface—that which was formerly the internal digestive surface.

In the inferior orders of zoophytes, however, we observe that there is also a posterior aperture to the alimentary canal, besides the anterior mouth. The mouths or polypi in those animals are developed

into highly irritable and sensitive sacs, the free margins of which are extended outwardly in slender filaments, and constitute the tentacula, upon the sides of which tentacula we have already seen the minute vibratile cilia placed, by the motions of which the food is brought within the grasp of the polypus. Those digestive sacs, the developed pores of porifera, are highly organized portions of the general fleshy substance of the body, that passes in those ramified tubular zoophytes, through all parts of their interior, the root, the stem, and the branches, in which the circulation is carried on, as shown by Cavolini. From the transparency of those polypi and of their horny cells we can distinctly perceive the contained bolus of food while it is in the act of being digested. We can see also in those simpler forms of polypi that the excrementitious matter, the residue of the process of digestion, is thrown out by the same orifices by which it was taken in, while the digested part is transmitted backwards through the general mass of the body, and not to the next polypi as imagined by Cuvier.

In more complex forms, however, of the zoophytes we observe the polypi acquiring a more elaborate internal structure, a more lengthened and isolated form, and even to exhibit dilitations, like cæca, developed from their parietes, as we see in the flustra (*Fig.* 1, *b.*, Vol. I., p. 352). Here the polypus has a dilated portion, like a rudimentary head, at the base of the circle of tentacula; from this it has a lengthened cylindrical form, curved upon itself, and fixed at the distal extremity to the parietes of the cell. Near to its distal extremity we observe a small cæcum, frequently empty, and frequently also containing some digestive matter. This little cæcum is probably the commencement of the formation of a new organ to assist in the process of digestion. It shows us the origin, probably, of the liver, the most essential and the most constant glandular organ concerned with the process of digestion. As yet we observe in this simple animal only the embryo state of a single chylopoietic gland. At the commencement of this organ or at the place where this glandular cæcum communicates with the alimentary canal, we can perceive by the microscope an incessant revolution of the particles, as we see in the bodies of the polypi of various other zoophytes, and somewhat resembling the motion we observe at the ciliated entrance of the polypi of *lobularia*. In the lower forms of zoophytes, where the polypi have internally the simplest structure, the food is brought to the mouth by means of vibratory cilia disposed on the sides of the tentacula, as in *sertularia*, *plumularia*, *flustra*, *alcyonium*, and many others; but in more complicated forms of this class, as in *madrepores*, *gorgoniæ*, *lobulariæ*, where the polypi possess a complicated internal structure, more nearly approaching to that of the actinia, the cilia are long appendices to the sides of the tentacula, but they are not vibratory. The polypus of the *lobularia* forms a nearer approach to the character of an independent animal than these organs in the lower zoophytes. The stomach here, as in many allied zoophytes, forms a distinct membranous tube within the body of the polypus, and quite open at its posterior extremity, like the stomach of an actinia, and each polypus has its distinct ovaries at its base, the ova or gemmules coming out through this open tubular stomach. In the *sertulariæ*, *cellariæ*, *alcyonia*, and many similar zoophytes, we perceive no such structure; but in the corticeferous zoophytes, as the *gorgonia*, we observe this complex structure of the polypus. That digestive internal tubular cavity within the body of the polypus is open at both extremities, as you observe in these polypi of the *lobularia*. This is a form of the stomach which is very closely analogous to that which we see in the actinia, where it is open both above and below, and in which, as in the lobularia, the reproductive gemmules, or young actiniæ, more or less developed, pass out through the cavity of the stomach. It is a sac ciliated around its entrance, and capable of extracting the nutritious part of the food that is conveyed into it by the vibration of its oral cilia, and which has been seized by the broad appendiculated tentacula. We observe that this internal membranous stomach is highly contractile; that by its contracting around the food, as in actinia, which is only an independent polypus, it prevents portions of it from escaping backwards, that have not undergone the process of digestion. We observe that it embraces the reproductive gemmules which enter it from behind, and facilitates by its peristaltic motions their escape from the body. The exterior tunic of these large polypi is muscular and contractile, like the tubular feet of echinoderma, which, indeed, resemble polypi shorn of their tentacula. These polypi of the *lobularia* are provided externally with regular longitudinal series of shining white calcareous spiculæ, attached to their parietes, and their interior cavities are continuous with those long fleshy canals which, on cutting open the animal, we see to compose the whole mass of the body. The digested part of the food of each polypus, though confined to its own internal canal,

passes thus freely backwards into the interior of the zoophyte. The same complicated structure, and almost independent character of these digestive organs or polypi, we observe in the *pennatulæ* and *virgulariæ*, where the gemmules come out through the prolonged bodies of the polypi. In the *tubulariæ* the polypi are still more isolated and independent, and are provided, like *actiniæ*, with a double row of tentacula around the mouth, which are shorn of their vibratile cilia. But the nearest approach to the *actinia* in the whole form and structure of the polypi, is seen in these large isolated *caryophilliæ*, where we observe already the tubular short membranous tentacula, disposed in a double row around the mouth, and destitute of cilia, where the stomach is an open internal distinct canal through which the gemmules pass, and where the polypi often, as in this *caryophyllia cyathus*, retain through life an independent and isolated condition. They are, indeed, actiniæ which have exuded a calcareous basis to fix them permanently to rocks against the agitations of the sea, and in a favourable position for food. So that from the simple stomach of the isolated *hydra*, which is both generative and digestive, we pass through a diversified series of zoophytic forms to the complicated structure of the isolated *actinia*, where distinct organs are appropriated to these two functions, the most general functions in animals and in all organized beings. The distinct internal isolated stomach of the *actinia*, open below as well as above, and separated by a wide space from the parietes of the body, we already see in numerous inferior forms of branched zoophytes; and also the disposition of the ovaries around the base of the stomach, with rudimentary vertical partitions of the body of the polypus, you already observe in the *lobularia*, *cornularia*, and many other forms of this class. The *actinia*, like the *hydra*, unfettered by a solid axis, stretches its elastic body over prey many times larger than itself, and by the great digestive powers of its capacious stomach it quickly extracts nourishment from all kinds of animal substances, living or dead, which are brought within its poisonous grasp by the ceaseless motions of the tide. The two passages or open canals which we observe, often beautifully coloured, extending opposite to each other, along the sides of the stomach to the ovarial cavity at the base of the *actinia*, appear destined to give a separate exit to the young, without passing through the cavity of the stomach, which is often filled with gravel, sand, broken shells, and other hard substances taken in with the food. This structure leads to the separate ovarial openings of *asterias*, *echinus*, and other echinodermæ, and, indeed, we are approximated more closely to that class, especially to the crinoid forms, and even to the asterias, by the isolated, pedunculated, radiated, subdivided, and pedigerous body of the *lucernaria*, which has still the soft fleshy contractile body, and the distinct open digestive canal, of the actinia and many of the simpler zoophytes.

The soft gelatinous free-moving *acalephæ*, transparent, as huge animalcules, are all stomachs, like the *hydræ* and *actiniæ*, and have their digestive cavity continued through every part, extending in numerous ramifications through their hemispherical mantle, their long filiform tentacula, and the pendent branches of their peduncle. In the *veroe* the intestine passes straight through the body, with the oral and anal apertures diagonally opposite to each other. Cæcal prolongations of the stomach are extended through the great air-sac of the *physalia*. The intestine of the *alcinæ*, like that of the *veroe*, passes straight through the axis of the body, surrounded below, at its oral entrance, by four prolonged marginal lips, which have here a cylindrical form, like tentacula, while in the *veroe pileus* the four labial appendices are broad, short, and membranous folds, capable of rapid extension and retraction. The long tubular proboscis in the centre of the lower part of the body of the *velella*, leads to the capacious stomach occupying the middle and inferior part of the animal, and from which minute orifices appear to extend to the numerous tubular tentacula placed around the mouth. The same plan of structure is observed in the minute, delicate, and closely allied forms of the *porpitæ*, which have their digestive cavity, the only important system yet developed, protected above by their internal skeleton as in the *velellæ*. Around the delicate margin of the *berenice*, which was thought by Peron and Lesueur to be agastric, there are numerous prominent papillæ, the tubular passages of which lead to a capacious central stomach. And the larger forms of *medusæ*, like inverted zoophytes torn from their solid axes and floating through the sea with their polypi extended in all directions, have generally myriads of tubular pendent prolongations extending from their long peduncle, and leading to a wide central stomach which radiates to all parts of the superior convex mantle. Larger orifices, varying in number, are for the most part also observed leading into this central cavity, sometimes central and single, in others more numerous, and disposed around the middle of the inferior

concave surface of the body. The ramifications of these anastomozing passages leading from the stomach through the gelatinous mantle of the *rhizostoma* to the circular canal around its margin, bear some analogy to a chyliferous system connecting a digestive with a circulating apparatus; but the whole of this vascular system ramified through the cellular tissue of their body, appears to be only an extension of the common digestive and absorbent cavity. From the numerous entomostraceous floating crustacea, and other minute animals generally found in the stomachs of the acalepha, they appear to subsist on food more highly organized than themselves, and divided by its nature into very minute parts.

The digestive organs of the slow-moving, thick-skinned, predaceous *echinoderma* are as variable as their outward form, and present us the links of transition from the expanded and radiated alimentary cavity of the *acalepha*, to the long cylindrical intestine of the articulated classes. The radiating, ramifying canals extending from the stomach through the circular transparent disk of the *rhizostome*, are still seen passing from the central digestive sac of the *asterias* through all the radiated divisions of its body. The stomach of the asterias opens in the centre of the lower surface of the body, the most frequent position of the mouth in the cycloneurose animals, and occupies the whole central portion or disk of the body. But extending from the sides of this capacious central digestive sac we observe two ramified cæca extending into each of the divisions of the body, however numerous or few these divisions may be in the different species, and these ramified continuations of the stomach terminate in little sacs generally filled with digested matter; so that where there are five divisions, as we find in most of the species of this genus, there are ten of those ramified cæca, and where the divisions are sixteen in number, as we frequently find in the *asterias papposa*, there are of course double that number of ramified cæca, or thirty-two extending from the cavity of the stomach. There are also complex vascular apparatuses connected with those ramifying cæca, and extending through the body, which belong to the circulating and to the respiratory system. Thus, then, the excrementitious matter, the residue of digestion, even in those highly developed forms of the asterias, passes out by the same opening through which the food is introduced into the body, as in the lowest monad.

This simple structure we find also in the *euryale* and in the *ophiura*, and it is the common structure in most of the stellerida; but in the *ophiura* and in the *euryale* the whole of this digestive system, with the cæca in a rudimentary state, is confined to the central disk, and does not pass into the long, slender, and often ramified divisions of the body. No cæca or other digestive organs extend beyond the central disk from which the arms radiate in these *ophiuræ*. In the *comatula*, which is apparently so closely allied to the *ophiura*, a structure is observed more complex. A small marginal opening, not far from the mouth, is seen at the extremity of a prominent papilla, which is distinctly continuous with, and forms the termination of, the alimentary canal; it is a distinct anal orifice. That structure is seen again in the *pentacrinus*, and it appears to have been the general structure of that immense and now almost extinct family of the crinoid animals.

We have here then, in these last forms, an alimentary canal, consisting chiefly of stomach, but having a distinct intestine and anus, and passing through the body; but in the *echinus*, the *cidaris*, the *spatangus*, and other globular forms of the echinoderma, the alimentary canal is of a still more elevated and perfect form. The mouth of the *echinus* and *cidaris* we have already seen to be provided with a very complex apparatus of teeth, lodged in long solid alveoli. From the back part of this masticating apparatus, we observe the œsophagus passing inwards, which enlarges into a small sac or stomach. In the interior of the body we observe not only an intestine winding twice round the whole of the shell, and with several partial enlargements in its course, but that that intestine is distinctly connected with the parietes of the shell by a mesenteric membrane, and with vessels minutely ramified upon this mesentery. This mesenteric membrane, with distinct veins ramifying upon it, is an unusual occurrence with other kinds of animals so low in the scale, or generally in the invertebrated animals. The intestine, after leaving the small stomach, passes to be attached to the side of the shell, and performs a revolution, thus connected by its mesentery to the inner surface of the shell. It turns again upon itself, and, with a reverse direction, it makes another convolution, and reaches the anus at the diagonally opposite extremity, the upper extremity of the shell, and around this upper anal orifice we perceive the five distinct openings for the five oviducts.

In the *spatangus*, we observe that the alimentary canal is destitute of teeth or other masticating organs, that the œsophagus opens directly towards the anterior

margin of the lower flat surface of the animal. This œsophageal opening leads to a slight enlargement or stomach, from which the intestine, converted again by a mesentery to the surface of the shell within, completely passes round in a winding direction, and reaches at length the anus. After performing a distinct revolution, attached by a vascular mesentery to the sides of the shell, it reaches the round anal orifice at the posterior margin of the body. Here, in the *echinida*, there appear to be no cæca developed at any part from this long cylindrical convoluted alimentary canal, and that the nutritious matter extracted in its passage through this cavity, is conveyed by vessels to the different parts of the system.

The *holothuria* is a lengthened *echinus*, deprived of its calcareous exterior crust, and we observe in it a more straight and lengthened form of the alimentary canal. Those vermiform holothuriæ have the anterior part of their digestive apparatus provided with long branching tentacula disposed in elegant tufts, which are placed around the mouth. The entrance of the œsophagus is provided with solid parts, which we have already seen consisting of five pairs of distinct calcareous pieces, like the alveoli of an echinus, giving attachment to the muscles that extend along the sides of the body. The œsophagus leads into a somewhat larger cavity, which, in the specimens before you, you will observe filled with sand and shells—this slightly dilated part is the whole of their stomach. From this the intestine, attached to the right side by a vascular mesentery, makes a slight convolution, and terminates below in a wide general receptacle or cloaca; this cloaca communicates with the intestine, and with those internal ramified tubular respiratory organs. The respiration is here effected through the anus, by drawing in water through the cloaca, and conveying it through all this ramified respiratory apparatus, which you perceive extending upwards through the general abdominal cavity. In the long vermiform body of the *sipunculus*, the teeth, which have already lost their calcareous matter in the *priapula*, are altogether wanting, and the long convoluted intestine is almost without a stomach or perceptible enlargement.

In the lowest classes of animals, we thus observe that the digestive apparatus, the first developed, the most essential, and the most universal system of organized beings, constitutes almost the entire body. The dense and dark and moving element of the ocean, is less fitted for the development of the fixed and tender vegetable forms, than for the free-moving, water-breathing forms of animals, and hence we perceive that these lowest classes of animals are not only all aquatic, and almost all marine, but that they are all carnivorous, all voracious, and all stomach. The excavated cellular tissue of the monad, and of higher *polygastrica*, is but a receptacle for organized floating particles, or minuter animalcules. The *porifera* are absorbent and digestive at every point of the exterior and interior of their body, to which the food has the freest access by the canals and currents that everywhere permeate their cellular substance, and the *zoophytes* are covered over with prehensile, digestive, and ever-hungry stomachs. The floating, stinging, excavated bodies of the *acalepha*, are but hollow, hungry, overgrown polypi, let loose through the sea, to prey upon all that they encounter, and the shielded bodies of the slow-creeping *echinoderma* only enable them to engage in more hardy contests, to gorge their capacious and distensible stomachs with prey on the rocky shores.

HOTEL DIEU, PARIS.

CLINICAL LECTURES ON SURGERY

DELIVERED BY

BARON DUPUYTREN,

During the Session of 1833.

Revised (before translation) by the Baron himself in the fasciculi of his "Leçons Orales de Clinique Chirurgicale," published periodically by G. Baillière, Paris.

ON FRACTURES OF THE PATELLA.

FRACTURES of the patella, Gentlemen, present several points worthy of examination, upon which the opinions of authors are still divided,—these are, principally, the mechanism by which these injuries are occasioned, the treatment, or rather apparatus, most likely to produce a cure, the formation of callus, and, finally, the possibility of obtaining an immediate union of the fragments. Since the commencement of this season, we have had occasion to treat six individuals in the hospital affected with fracture of the patella; in all these cases the solution of continuity was horizontal; five of these have been perfectly cured without any deformity, and have recovered the entire and free use of the injured extremity; the remaining case is still under treatment.

The fracture in this latter instance was produced by a fall upon the left knee, and accompanied by considerable tumefaction,

resulting from an effusion of blood into the soft parts, and of bloody synovia into the articular cavity. It was easy, nevertheless, to recognise the nature of the injury; when the finger was passed over the surface of the patella, some pressure being exercised at the same time, an interval was distinguished, separating the bone into two fragments, one superior, the other inferior; these fragments might be moved in contrary directions, and brought into contact by the extension of the member, when a crepitation could be distinctly heard. In spite of the severe accidents which accompanied this injury, this patient is in a rapid way towards a cure; but one circumstance, which I have repeatedly noticed before, occurred during the treatment; as the bandage which unites transverse wounds acts principally upon the skin for a *point d'appui*, the integuments being pressed backwards, were driven in between the edges of the fragments, and kept them separated, in consequence of which we were obliged to substitute a new dressing.

Fractures of the patella, Gentlemen, may occur in two ways, either by the effect of some violence applied directly to the anterior region of the knee, or in consequence of powerful action in the extensor muscles of the leg; however, in a few cases, the accident has been produced where the muscular effort was not very considerable; in fact, we have numerous examples in which this fracture was produced by a leap, during the effort of the individual to give a kick, &c. In all these cases a small portion of the posterior surface of the patella is applied upon the edge of the femoral condyles, and as the limb is demiflexed, the two extremities of the bone are drawn strongly backward by the tendon of the extensor muscles, and the ligament of the patella. During any effort which takes place, while the parts are in this position, the edge of the femur serves as a point d'appui for the powers which act above and below upon the patella, and a solution of continuity takes place, proceeding from the anterior to the posterior surface of the bone. A great number of these fractures has been erroneously attributed to falls upon the knee. It has not been sufficiently remarked, that in this case the weight of the body is chiefly thrown upon the tuberosity of the tibia, not upon the patella; from the angle at which the lower extremity is flexed, the whole shock of the fall is supported by this prominent portion of the bone, while the patella, being drawn upward by the rectus femoris muscle, and preserving its vertical situation, can only touch the ground with its lower extremity; falls upon the knee are therefore in most cases rather the consequence than the cause of the fracture; the patient tumbles down, because his patella is fractured, and the lower limb can no longer sustain the weight of the body. Cutting or bruising instruments may divide the patella into two or more fragments; the same accident may arrive in consequence of a fall, when the leg is strongly flexed upon the thigh, and the bone happens to strike against any inequalities of the ground; but even in these cases, the fracture is in great part caused by the action of the muscles; we know, in fact, that the slightest shock upon the knee is sufficient to excite the contractions of the rectus femoris, which may rupture the osseous fibres of the patella, without exercising any extraordinary force. To this cause, probably, we must attribute the frequency of transverse fractures of the patella, and the very rare occurrence of those which are vertical.

As I have already remarked, there exists a great deal of difference between fractures of the patella produced by muscular efforts, and those which result from any force directly applied to the knee. The first are rarely complicated by contusion, laceration of the soft parts, or articulation, unless indeed the patient may happen to fall after the bone is broken; but the second are in most cases accompanied by extensive injury of the surrounding tissues; sometimes the patella is splintered to pieces, the articular capsule laid open, and the cavity filled with extravasated blood. Such complications generally render the consequences of the primitive accident extremely dangerous; here is an example:—

Case I.—A patient advanced in life, affected with fracture of the patella, in which the separation of the fragments was inconsiderable, but attended with dangerous accidents, was carried off after a long illness by cerebral and intestinal symptoms; the morbid appearances of the joint were examined with the greatest care; at first sight the fracture, which was imperceptible to the eye, could scarcely be distinguished, and the slight fissure which existed across the bone could only be discovered by the finger; when the articulation was opened, the inner surface was found of a deep-red colour, filled with a bloody purulent matter, a proof of the existence of inflammation, which had terminated in exudation. As to the blood, it was perhaps extravasated at the time of the fracture; the synovial membrane was excessively red, and of the colour manifestly produced by the development of

sanguineous vessels, and the cartilages were also inflamed.

These disorders in the articulation sufficiently explain the patient's death. On the internal surface of the patella, we perceive the slit which marked the fracture, but it was situated higher up than on the external surface. The bone had, consequently, been fractured from below upward, and from before backward. The two fragments were intimately united; there remained no trace of a solution of continuity towards the side of the tibia, and towards the fibula the traces were extremely slight. The facility with which the fragments may be kept in contact and the solidity of the united parts after the cure, are considerably affected by the circumstance, whether the fibrous layer which covers the patella be ruptured or not. This fibrous membrane forms a kind of sheath, by which the separation of the fragments is opposed, and serves as a bed for the deposition of the substance which is afterwards to unite them. Hence we should be most careful to preserve the integument of this membrane, and to avoid those extensive movements, which are too often executed with the intention of ascertaining the existence of fracture.

Although the vertical fracture is much less common than the transverse, the former is not very rare; yet this is rarely noticed in our most modern works upon surgery. The oldest examples we find in the treatises of Lamotte. The fracture in that instance was produced by a fall from some height, and the two portions of bone slightly separated from one another; the limb was placed in a state of complete extension, the knee enveloped with cloths dipped in an antiphlogistic lotion, and a moderately tight bandage applied. In about twenty days the fracture was perfectly united, and the patient resumed his ordinary labour. Nearly twenty years ago I received into the hospital a man who had broken a number of bones in falling from an elevated height. The right knee was enormously contused and deformed; he died on the third day, and on examining the knee, we found a vertical fracture of the patella; the bone was divided into two equal portions; the fragments, which were very moveable, produced crepitation on the least touch, and might be displaced in any direction; the articular capsule contained a large quantity of a bloody fluid.

Case 2.—Six months after this a patient was brought to the *Hôtel Dieu*; he had been drunk, and thrown down by a coach. The marks of the iron of the wheel could be seen on the left thigh, knee, and leg, and the patella was split longitudinally; the crepitation of the fragments was easily recognised, as well as their displacement in the transverse direction, and the latter was removed by the position of the limb and a proper bandage.

The patient was on the point of being cured when he was attacked, without any known cause, by a pleuro-pneumony, which carried him off on the 20th day after the accident. The injured parts were examined with great attention, and we found a well-formed callus uniting the fragments, and permitting merely the slightest motion; in short every thing announced that he would have been perfectly cured in less than a month.

Three years after this, a man entered the *Hôtel Dieu* to undergo treatment for a varicose ulcer of the leg. On examining the affected limb, we observed that the patella was broader than natural, and presented a well-marked vertical ridge in the centre. When asked as to the cause of this appearance, the patient said he had fallen down a few years before, and fractured the thigh and leg in several places. The patella had also been fractured, and the increased volume indicated what a quantity of callus had been laid down. When the extensors of the leg were relaxed, the bone could be moved easily upon the condyles of the femur, and a sound, produced by the grating of some prominence, readily distinguished. Here it was evident that the patella had been fractured in the vertical direction, and that this irregular union had been effected by the efforts of nature alone, or by an ill-adjusted position of the parts. Here is another example of this kind of fracture.

Case 3.—A servant girl, 19 years of age, small, brown-complexioned, and of feeble constitution, for a long time affected with pulmonary catarrh, fell accidentally from a second-story window, and wounded the head very slightly; she also contused the left knee. On getting up she was unable to lean upon the injured limb, and was carried to the *Hôtel Dieu*, when we found that the patella was broken into two unequal fragments; there was a considerable quantity of blood infiltrated into the contused parts. The wound upon the knee-joint suppurated abundantly, and the limb was affected throughout with a great deal of pain. The general state of the patient was unsatisfactory; the tongue was white in the middle, and foul, red at the tip and edges; the skin was dry and warm; there was some confusion in the ideas, with loss of appetite and sleep; there was no diarrhœa, but the patient coughed without intermission, and the

patient died of the internal affection before the union of the fragments was affected.

Remarks.

I have recently treated in the hospital a certain number of this kind of fracture, which proves they are not extremely rare, although passed over in silence by most writers, or even doubted by others. The facts which I have detailed show, that they depend generally on some external violence, and are accompanied by wounds or contusions more or less severe, which require the special attention of the surgeon. The diagnosis of fractures of the patella is in most cases sufficiently easy. When the bone is broken transversely while the patient is in the upright posture, he falls immediately, and is unable to get up, or when he attempts to raise himself, he finds that the limb has lost its strength and firmness, he is unable to walk, and is obliged to drag the injured leg.

These circumstances indicate the existence of fracture, which is further proved by the flat appearance of the knee; and by passing the finger along the surface of the patella, we can easily feel the depression which exists between the fragments; the superior one is drawn up by the extensor muscles of the thigh, while the inferior fragment is retained in situ by its ligament. On extending the limb strongly, and elevating it upon the pelvis, the muscles of the anterior part of the thigh are relaxed, and the separation of the fragments disappears almost completely. If the fragments are now seized and rubbed against one another, crepitation is felt, and the nature of the accident placed beyond all doubt.

The swelling of the soft parts about the knee is very rarely an obstacle to the establishment of our diagnosis; the thinness of the integuments and the softness of the tumour generally permit us to arrive without much difficulty at the patellæ, and to recognise the fracture. But when the solution of continuity is oblique or longitudinal, the greatest attention is required to determine its existence, from the little separation which takes place between the fragments acted on by no muscular power. However, by demiflexing the leg upon the thigh, as was done by Lamotte, in the case already alluded to, we obtain a more marked interval between the two portions of the bone. In all cases, when we are unable to decide positively, on account of the tumefaction of the part or other accompanying accidents, there is nothing to prevent us from applying the proper treatment before we attempt reduction. After what has been said, you can readily conceive, Gentlemen, on what basis the treatment of this kind of fracture should be founded. Your chief object should be to combat any attending accidents, and to procure the most exact union of the two fragments. By keeping the limb strictly at rest, by employing general and local bleeding, emollient topical applications, refreshing drinks, &c., the first object is attained.

At the same time we should not lose sight of the general state of the patient, of his digestive organs and brain in particular, as the functions of this latter organ are often troubled in consequence of the primary injury. As to the reunion of the fragments in the transverse fracture, we have to remember that their separation is produced and continually kept up by the action of the extensor muscles of the leg, and by the flexion of the limb; hence our first indication should be to neutralize this muscular action, and place the limb in a proper position. It is essentially necessary that the limb should be kept steady in the position, and that a bandage of some kind should be applied, calculated on the one hand to preserve the fragments in perfect contact, and, on the other, to oppose any contraction of the extensor muscles, which often occurs in spite of all our attention.

The apparatus which I am in the habit of employing, consists of the following parts:—

1st. An inclined plane, composed of pillows placed one over the other, and extending from the heel to the tuberosity of the ischium; this produces the double effect of opposing the flexor muscles of the leg, and placing the extensors in a state of complete relaxation.

2nd. Two pads, about twenty inches long by four broad; they should be thick and strong, and the edge should be folded down longitudinally. The first is pierced at one of its extremities by three slits, and the edges are also to be folded; the opposite extremity of the other is divided into three slips.

3rd. Two bandages, eight or ten yards long, and three inches broad.

4th. A few graduated compresses, six or seven inches long, and as many lines broad.

We commence by enveloping the foot in a few rolls of the bandage, and then place the extremity of the long pad over the dorsum of the foot; here it is to be fixed with pins and a few more turns of the bandage, and then laid upon the anterior surface of the leg; when this is done the bandage is rolled, nearly to the level of the patella, and the extremity brought down parallel to the leg; an assistant now draws up with all his force the muscles situated on the posterior part

of the thigh, and the surgeon passes a few turns of a bandage about the middle part; he then fixes the extremity of the second pad on the anterior surface of the limb by a few more rolls, and turns the other extremity from above downward, continuing to apply the bandage as far as the upper edge of the patella; the graduated compresses already mentioned are placed above and below the patella, and the slips of one pad being passed through the fissures of the other, the fragments are brought into contact by a moderate traction exercised on them; finally, the two extremities of the pads are fixed, one upon the thigh, the other upon the leg; when the apparatus is fixed in this manner, the lower extremity is placed upon the inclined plane of pillows; the inclination falls from the foot to the tuberosity of the ischium, i.e., the most elevated point of the plane is at the heel, and the lowest or thinnest partis near the tuberosity of the ischium; thus the heel is much more elevated than the knee or thigh.

You see, Gentlemen, from the description I have just given you, that the apparatus we are in the habit of employing, is composed of four distinct parts; each exercises an isolated action, but they are still so connected as to produce the desired effect. The first, or the inclined plane of pillows, is destined to maintain the limb in a proper degree of extension; the second part, applied on the foot and leg, and the third, on the thigh, are intended to prevent any muscular contractions of the lower extremity; finally, the fourth part of the apparatus keeps the two portions of the broken bone in exact contact.

However, I should observe to you, that although this apparatus presents many advantages and is sanctioned by experience, yet it will be insufficient, as well as any other means, to obtain a perfect consolidation of the fracture, unless its action be aided by the docility of the patient, who should be enjoined to keep the limb in a state of the most perfect rest. About three weeks ago two patients, who had been affected with fracture of the patella, left the hospital cured; but one of them who was turbulent and indocile, never kept himself quiet during the period he was under treatment, and removed the apparatus several times; in consequence of this the fragments remained separated nearly an inch: the other, on the contrary, who supported with much courage and patience the compression of the bandage and long period of repose, was cured without any unpleasant consequence of the accident. This and a great many other facts which have occurred during my practice, leave no doubt as to the possibility of obtaining immediate union of the fragments by the deposit of new bone, provided we can maintain them in perfect contact for a sufficient length of time. In the greater number of cases, indeed, the union of the fragments takes place, through the medium of a cellulo-fibrous substance, developed between the broken portions of the bone.

Sir A. Cooper and some other surgeons have observed, with care, fractures of the patella and of the neck of the thigh bone, and have found that a transparent, fibrous, or fibro-cellular matter, had been laid down, by exposing the fragments to the action of turpentine. When the celebrated English surgeon visited Paris in 1829, I showed him several preparations in which the fragments were perfectly united, and the fibrous matter could not be seen. Without doubt we should attribute this perfect union to the long period which had elapsed after the cure, in consequence of which the callus had been converted into bone; in fact, if you observe what takes place in vertical fractures, you will be convinced of the truth of the opinion. In these cases, as there is no reparation, the callus is converted into bone at the end of six or eight months. The absence of ossific matter is caused by the great separation of the fragments produced by muscular contraction, and whenever we are able to neutralize this action, the transverse fracture admits of union similar to the vertical one. But let the bandage be ever so well applied, it sometimes tends continually to lose its effect, from the relaxation of the parts composing it, while, on the contrary, the muscular power augments in the same proportion. Besides, the bandage often becomes insupportable in consequence of the pressure, and we are compelled either to loosen or to remove it altogether. Sometimes it produces severe symptoms, tumefaction, excessive tension, inflammation of the part, and gangrene; and these effects are more likely to occur when the apparatus is applied shortly after the occurrence of the fracture. Hence you should be careful to apply it at first with a moderate degree of tightness, and observe the state of the patient attentively, in order to guard against the accident to which we have alluded. The following example will serve to impress these precepts more strongly on your memories.

Case 4.—A man, forty-three years of age, happened to fall upon his left knee and fractured the patella; he was immediately transported to one of the hospitals; on the next morning the knee was found considerably swollen and very painful;

notwithstanding these symptoms a compressive apparatus was applied, and drawn so tightly that before evening the patient found himself in the greatest degree of suffering: he passed an agitated night, constantly crying out through pain; yet no attention was paid to the case until 48 hours afterwards, when the violent and continued cries of the patient induced the surgeon to remove the apparatus. Ecchymoses had formed on different parts of the leg and foot, mixed with some brown spots: even this did not prevent the re-application of the bandages as tightly as before, but the surgeon was compelled to remove them next day. At this time the foot and leg were marked with several brown spots; gangrene soon set in, the patient became delirious, the skin warm, &c., and the lower part of the leg became quite decomposed. The leg was amputated on the sixth day after the accident, but the patient died in a short time afterwards. On examination after death, the nature of the fracture and the changes which had taken place during the sixteen days that elapsed between the accident and the patient's death were found to be as follows:—the fracture was transverse, and the two fragments were separated from each other by an inch, but still in some measure connected by the tendinous expansion of the extensor muscles, which had not been divided, and by a few fibrous bands extending from one portion of the bone to the other. These were at first mistaken for a new production, but this error was soon rectified by comparing the resistance which they offered with the short space of time in which they must necessarily have been generated. The edges of the fractured portions were not rough, but seemed to have been smoothed down by absorption. There existed between the two portions of bone, a reddish matter, the consistence of which augmented the nearer it lay to the fractured surface; here it was almost cartilaginous, and seemed to make a part of the patella.

Vertical fractures require to be equally treated by repose, and a complete relaxation of the muscles. Some writers, adopting a false theory, have advised us to favour contraction of the triceps muscle, in order to bring the two portions of the bone, which is divided longitudinally, together. But this is a bad practice, and experience proves it to be likely to produce separation of the fragments, probably in consequence of the anatomical disposition of the parts and the manner in which the articular capsule is inserted into them. It is, on the contrary, much more judicious to relax these muscles as much as possible, a principle which is applicable to all analogous lesions: besides, a passive state is the only one which the patient can support; it is impossible that he should sustain for any length of time a permanent muscular contraction. The limb must therefore be kept a little elevated, and protected by hoops from the action of the bed-clothes: in this position the fragments cannot be displaced, nor the process by which the callus is formed be disturbed.

These fractures, like similar injuries to the neck of the femur, require a period of sixty to eighty days, or even more, before they can be perfectly consolidated. After that lapse of time the patient may be allowed to take gentle exercise, if the state of the soft parts will admit of it, for the relative position of the fragments is not calculated to admit any elongation or deformity of the callus. Besides, we can give a requisite degree of strength to the joint by applying a knee-cap, or even a simple bandage. Finally, experience proves that by confining the patient to bed for a longer period, we can obtain an osseous cicatrix still more solid, and almost imperceptible; in a word, that the interval which separates the fragments after the formation of the callus, is directly inverse to the length of time the patient has been confined.

Case 5.—I conclude these observations with the following example: a man who had fractured the patella in several places, and at the same time broken the upper part of the femur, was obliged to confine himself to bed for six months; the common apparatus was applied during a month or six weeks, and removed as often as the relaxation of the bandages required it. At the termination of the five months, the portions of the fractured patella were so perfectly united as to leave no appreciable trace of the solution of continuity which had taken place, the surface of the bone being simply marked by a few slight irregularities.

DISSECTION OF A GRAVID UTERUS.

ITS CONNEXION WITH THE PLACENTA.

To the Editor of The Lancet.

Sir,—Considering that the following account of the appearances observed in the dissection of a gravid uterus may prove interesting, as it corroborates some of the important facts which have been brought before the public by Dr. R. Lee on the connexion of the placenta with the uterus, I beg to forward it for insertion in The Lancet.

Mrs. T——, aged 38, of rather a delicate and weak constitution, the mother of two or three children, in the last stage of pregnancy, and expecting her confinement every day, was attacked with cholera on the 21st of July, 1834, which proved fatal in eighteen hours, although the most prompt and judicious measures were employed by Mr. Murchison, a student at the school of Webb-street, to whose kindness I am indebted for the opportunity of making the *post-mortem* examination, which was done fourteen hours after death, by Mr. Murchison, Mr. Tyson, and myself.

As the friends would allow only a partial dissection, we particularly examined the uterus; and on cutting through the abdominal parietes (which were extremely thin) the peritoneal covering of the uterus appeared more vascular than usual; the muscular coat was rather thinner than natural, and not so firm as it is generally found to be. The uterine veins or sinuses were very large, especially in the immediate neighbourhood of the placenta, towards which they appeared to run, almost like *radii*, from the circumference to the centre of a circle; they all passed longitudinally, and appeared to run for a long distance closely under the lining membrane of the uterus, before presenting their semicircular or oval openings, which were very distinct; and though great caution was used in tracing them, *none* could be found to enter the placenta, nor to pierce the tunica decidua uteri, which was beautifully seen passing behind the placenta. Vessels, apparently arteries as well as veins, of some size (three or four as large as crow-quills), were distinctly seen passing from the uterus into the placenta, directly from without inwards and *vice versa*, and crossing the uterine sinuses almost at right angles. The placenta separated very easily from the uterus, the vessels above alluded to offering but little resistance, the uterine veins offering none.

The mouths of these uterine veins were filled with a sort of duplicature or plug of the deciduous membrane, which was everywhere soft, and in many places quite pulpy.

A full-grown and well-formed male fœtus was found in the uterus. There was no dilatation of the os tincæ.

C. MILLARD.

Dean Street, Southwark,
July 29, 1834.

RETENTION OF URINE

SUCCESSFULLY TREATED WITH THE TINCTURE OF LYTTA.

To the Editor of THE LANCET.

SIR,—Not having met with any account of a case of retention of urine from atony of the muscular power of the bladder, as being treated with the tincture of lytta, I am induced to submit to your notice the following successful instance. Should you deem the case of sufficient merit, an early insertion of it in your widely-circulated Journal would oblige yours, obediently,

JESSE LEACH,
Clinical Assistant.

Westminster Hospital,
July 25th, 1834.

Several objections might be urged against the internal use of lytta, but more especially that in general, if largely given, it produces strangury. The present case affords a good instance of its beneficial effects, without producing that unpleasant concomitant. In some cases treated at this hospital, strangury was brought on before any benefit was derived from the exhibition of the lytta. The acetate of morphia and camphor mixture were given in this case with a view of allaying the spasmodic hysterical paroxysms, which about this period were very violent, and which, shortly after the exhibition of the medicine, ceased.

Ann Gough, æt. 22, of a sallow and bloated appearance, having been for some years, periodically, a martyr to sparing menstruation and hysteria, suffered, about a year previous to the present attack, from retention of urine for four months. She was admitted into Queen's Ward on the 25th of June, 1834, under the care of Dr. Bright, labouring under a violent hysterical paroxysm, which readily yielded to the usual treatment, leaving, as on the previous occasion, a retention of urine, preceded by pain in the back, aggravated by percussion over the third or fourth lumbar vertebræ. The warm-bath, leeches, cupping, and, ultimately, the *ung. ant. tart.*, were had recourse to, without the slightest benefit to the bladder. On June the 29th, she could not void her urine without the aid of the catheter, which was necessarily employed twice a day. On July the 8th, it was determined to give internally the following medicine, in order to excite the bladder, as there was no evident inflammatory action:—

℞ *Tinct. Lyttæ* ʒij; *Acet. Morphiæ* gr. j; *Mist. Camph.* ʒviij. Capt. ℥j ter die.

July 10. The hysterical paroxysms have not recurred so violently, but no attempts as yet have been made to pass her urine without the catheter, although she complains of a burning pain in the course of the left ureter and hypogastric region.

12. The burning pain continues, without any tenderness upon pressure.

13. Several unsuccessful attempts were made during the morning to void her urine without the catheter, but she did not succeed till the evening, when the urine was voided with a slight scalding, and possessing an ammoniacal smell, but free from blood.

14. Has had no difficulty in voiding it this morning. The scalding continues.

24. She has perfectly convalesced up to this period, and leaves the hospital this day.

ON THE USE OF COLCHICUM AUTUMNALE IN FLUOR ALBUS.

To the Editor of THE LANCET.

SIR,—May I beg the favour of your inserting the following communication on the use of *colchicum autumnale* in fluor albus, in your very valuable periodical:—

Some years since I was desired to visit a lady labouring under a very complicated assemblage of symptoms, and amongst them an aggravated form of fluor albus. She had a pallid countenance, swollen feet, and a profuse discharge, which various remedies failed to relieve. With a view to treat other symptoms, I prescribed the powdered root of *colchicum*, and during its exhibition the patient remarked that the leucorrhœa and œdema of the feet gradually diminished and finally ceased.

Since that time I have treated a vast number of cases of leucorrhœa with the powdered root of colchicum, and I can faithfully add, with an almost invariable success. I commence its use with three grains of the powdered bulb made into a pill with hard soap, to be given three times daily, and I increase the dose to five grains. During the period the patient is taking the colchicum, it will be absolutely necessary for her to abstain from *every* beverage which contains alcohol. Five grains of powdered bulb of colchicum, exhibited three times daily, will very generally cure leucorrhœa in ten days. Some cases require its continuance for three weeks, and others for a month. I have several times seen the discharge return after the discontinuance of the medicine, but after further perseverance in its use, I can scarcely recollect a case which finally resisted its influence. Under the hope that it may be as successful in the hands of other practitioners as it has been in mine, I have the honour to be, Sir, your obedient servant,

GEO. RITTON.

25, Great Charles-st., Mountjoy-sq., Dublin, July 16th, 1834.

RECORD

OF THE

CONCOURS HELD AT PARIS,

IN JUNE 1834,

To supply the Vacancy in the Chair of

CLINICAL SURGERY,

OCCASIONED BY THE DEATH OF BARON BOYER.

(Continued from page 631.)

LECTURE OF M. LISFRANC.

(*June 28th.*)

First Patient.—FRACTURE OF THE CLAVICLE.

THE first patient examined by M. LISFRANC, was a man thirty-eight years of age, in the Salle St. Vierge, No. 8, Hotel Dieu. He was a mason by trade, and formerly had some affection of the vertebræ; there is also the mark of an old cicatrix in the right groin. Three days ago he was struck on the anterior and superior part of the chest by a large piece of wood, which fell from a second story. There is an erosion of the skin over the coracoid process of the scapula, and tumefaction below the scapula, near its external third. The skin here is marked by several yellow spots, resulting from the absorption of a portion of the blood. (Here a slight digression on the theory of ecchymosis.) There is no induration or fluctuation about the tumefied parts. The patient cannot raise the hand to his head, and the shoulder is brought nearer to the sternum than it should naturally be; this symptom alone is sufficient, without further question, to prove a luxation or fracture of the clavicle. In addition to these symptoms there was mobility of the two portions, and crepitation, with an inequality of surface readily felt by the finger. It is easy, from this account, to diagnosticate fracture of the clavicle. (Here M. LISFRANC returned to the symptoms, and explained them according to their causes and manner of development.) The fracture is situated at a point of the bone where the

action of the deltoid muscle is balanced by that of the trapezius; hence the displacement downward of the external fragment is less than it would have been, had the fracture taken place in any other part of the bone. Displacement of the external fragment downwards is the one most commonly seen in fracture of the clavicle; however, in some cases, it remains superior,—a phenomenon which BOYER has not mentioned in his great work on surgery, and which M. LISFRANC attributed to an obliquity of the fracture. (Here the speaker entered into a consideration of the five displacements admitted by authors for fracture, and described a sixth, viz., an elongation of a long bone, when fractured, resulting either from a paralysis of the muscles surrounding it, or in consequence of strong traction on an oblique fracture, by which the fragments are drawn asunder and allowed to meet by the most prominent points of the extremities.) In the present case the crepitation is manifest to the touch and the ear. (Here M. LISFRANC took occasion to remind his auditors, that he was one of the first to employ the stethoscope in difficult cases of fracture.)

The cause of the accident in the present case has been direct, a circumstance which does not often present itself in fractures of the clavicle. Did the venereal affection by which the patient was affected 10 years ago contribute to render the bones more fragile? This is by no means probable. The influence of syphilis on the bones is much less marked than that of many other diseases. M. LISFRANC took occasion here to correct an expression erroneously employed by many surgeons and authors who say that cancer, or the cancerous diathesis, renders the bones *more friable*. For the last 15 years, said M. LISFRANC, I have been in the habit of giving a course of operative surgery, and have frequently employed for that purpose the bodies of cancerous patients brought to us from the Salpêtrière; instead of being dry and easily broken in splinters, as we would imagine from the account of authors, the bones were more soft, more humid, and more gorged with fluids, than in the natural state, so much so that three or four strokes of the saw were generally sufficient to divide the largest bones.*

The prognosis is favourable in the present case: the patient's general health is good, the chest sound; there has been no considerable vessel acerated; besides, the fragments have not suffered much displacement. If the fracture have been accompanied by some little splinters, these will be absorbed, or may be comprised in the callus, as M. LISFRANC has observed in several bodies brought to his course of operations. The only unfavourable complication is the presence of the ecchymosis and tumefaction arising from effused blood; for although HUNTER has pretended that in all cases the blood shed about a fracture goes to constitute the callus, yet we are now convinced that its effect is rather to retard than to promote consolidation. The treatment is simple enough:—sanguineous evacuations to favour the absorption of the blood effused; then emollient topical applications. Surgeons are in general too ready to have recourse to discutients; but this is a manifest fault; for immediately after an accident of this kind there is always an excess of tonicity which we should reduce; afterwards, when the pain is gone, when all irritation has disappeared, we may employ revulsives. (The different methods proposed by surgeons for sustaining the fragment in situ were now examined by M. LISFRANC, who pronounced his opinion in favour of DESAULT'S apparatus, which he described at length.)

Second Patient. — ŒDEMATOUS AND PHLEGMONOUS ERYSIPELAS OF THE HAND.

The second patient, lying in the same ward, No. 21, was a German, 63 years of age; he has been ill for a month: before that period he always enjoyed good health. Some time back he was wounded on the ring finger of the right hand by a cutting instrument, which divided the tendons, and perhaps injured the bone: amputation became necessary, and the finger was removed eight days ago at the articulation between the first and second phalanges, with an inferior flap. Four days back the patient was seized with frequent vomiting of a bilious matter, and to-day the patient presented the following symptoms. The stump was somewhat tumefied, and the wound was of a bad appearance; the whole hand was œdematous, and swollen; the impression of the fingers remains and disappears slowly; the skin of the hand is red in several points, and the tumefaction, with redness, ascends some

* This description of the bones of cancerous bodies is perfectly correct; but in some cases the bones of a cancerous patient are very readily broken, though not at all *friable*. The cause of this phenomenon was first pointed out many years ago by Dr. Macartney, of Dublin. The bones, in cancer, are sometimes the seat of small cancerous tumours, which destroy the interior and leave nothing but the shell. The French surgeons do not seem to be aware of this.—*Reporter.*

way on the arm; the quantity of pus furnished by the wound is moderate, and along the exterior tendon there is a collection of purulent matter reaching up as far as the middle of the finger; but the closest examination did not discover any deposit of pus on the palmar surface. This latter circumstance rarely takes place, for purulent deposits are much more frequently found in the sense of flexion than of extension. Perhaps the apparent absence of pus in this direction may arise from the patient's finger having been recently dressed before the visit.

The disease is, therefore, œdematous erysipelas of the hand, and, in some places, phlegmonous, especially near the wrist-joint, into which, probably, at a future period, some small abscesses may open themselves. To the symptoms already described may be added engorgement in the axillary space, which is painful on slight pressure. The patient is feeble; he is warm, but the pulse is normal. There is no appetite nor thirst; no pain in the abdomen, though the tongue is somewhat foul, and the patient has been constipated for the last ten days. M. Lisfranc, without clearly stating why, thinks that the patient has had or has a slight gastrite.

To what is this affection of the stump and subsequent erysipelas of the hand to be attributed? All kinds of wounds, according to the observations of M. Lisfranc, have, during the course of this year, been frequently complicated with flying erysipelas. It might, therefore, be accounted for, in the first place, by a reference to the medical constitution of the year. But, perhaps, we may also conclude a morbid state of the alimentary canal, principally of the stomach, as having preceded it, and then the disease comes under the head of bilious erysipelas.

As to the state of the hand, there is as yet no abscess clearly formed; but it is very probable that he will have a collection of pus under all the points where the skin is much tumefied and red. This colouration of the integument indicates the probable existence of an abscess in a short time; but we must not be too ready to conclude that no collection of pus will take place, because the redness may have disappeared. (Here the speaker drew the attention of his auditors to a fact which he regarded as of great importance in a practical point of view. In many cases of this kind, said M. Lisfranc, whether there be œdema or not, the redness of the skin disappears; the patient no longer suffers; he thinks himself cured, and walks about as if in perfect health; and if the surgeon overlook the latent inflammation, and share the confidence of his patient, he is astonished to see, sooner or later developed under the integuments, a number of abscesses in the cellular tissue, which are at first easily mistaken or overlooked, but which effect the separation of the skin to a great distance.

M. Lisfranc has seen patients at the *Hôpital de La Pitié* in whom four or five of those abscesses were developed in a few days. It is then absolutely necessary for the surgeon to be on his guard, and to examine the affected limb frequently and with care, in order to discover the first appearance of this abscess, and arrest its development. The *prognosis* is not unfavourable, for the disease is not violent, and has not made any alarming progress; however, the patient should cautiously abstain from every error of regimen, &c.; neglect of a strict diet might, in the state he is in, bring on an inflammation of the alimentary canal, which, on account of his advanced age, would be accompanied by considerable danger.

The *treatment*, in the present case, is limited to a very few indications; the first care of the surgeon should be to divide the fistulous passages, place the limb in a depending position, and make use of frequent dressing, in order to avoid the danger which would arise from an absorption of pus.

As to the erysipelas, we may ask whether general bleeding might be tried with advantage; the answer is, no; abstraction of blood by venesection is contra-indicated by several circumstances; first, by the advanced age of the patient, who has reached his sixty-third year; secondly, from the length of time he has already suffered, and on account of the gastro-enterite, by which he is already reduced and debilitated; these are reasons for abstaining from a general bleeding; besides, the inflammation is of some standing, and we know that when this is the case, bleeding has not the same good effect as when the inflammation is commencing; finally, we have here to treat an erratic erysipelas (*erysipele ambulant*) against which blood-letting is employed with less success than in any other species.

We should always, said M. Lisfranc, bear in mind the precept of the great English physician Sydenham, who lays down as a general rule, that our first care should be to observe the constitution of the year, and the character of the reigning epidemic, in order to found our treatment on this basis; I have often myself had occasion to witness the truth of this; thus, where erysipelas has attacked a great number of subjects, and with symptoms very similar, or even identical, I have seen

blood-letting produce excellent effects one year, and in the next altogether fail to bring any relief.

Scarification has been recommended by the English surgeons in the treatment of erysipelas; I have seen Beclard try this method, but he soon gave it up. Others praise frictions, with mercurial ointment; some place their great reliance on blisters. This latter remedy has been blamed in all cases where the erysipelas is accompanied by any gastric symptoms, as likely to aggravate the irritation of the stomach; but here there is no danger of this, and I know no other means better calculated to centralize a wandering inflammation than a blister. I would, therefore, apply a blister at once, and repeat it two or three times if necessary; I need only remind you of the success which you have seen attending this treatment at La Pitié. Not very long ago, I was compelled to extirpate a cancerous breast of an enormous size: from the extent of the diseased parts I was compelled to detach, following the roots of the cancer under the skin, and separate the skin from the subjacent tissues to a considerable distance. The integuments, which covered the enormous wound made by the operation, were seized with erysipelas, which was very soon arrested, and completely removed, by blisters.

LECTURE BY M. LEPELLETIER.

(*June 30th.*)

First Patient.—Cyst on the Sacrum, resembling Spina Bifida.

The first patient examined by M. Lepelletier was an infant, three years of age, in the Sallé St. Jean, No. 24, Hôtel Dieu. This is a healthy vigorous child. On the posterior part of the sacrum, near its middle, we observed, said M. L., a prominent tumour, of an oval form, rounded towards the summit, and situated between the skin and the aponeurosis covering the muscles; this tumour is congenital; at the child's birth it was not larger than a very small apple (*pomme d'api*), but at present it has acquired the size of the head of a fœtus of from six to seven months.

The skin covering the tumour is healthy, being merely marked here and there by some fine veins not much enlarged or varicose; the tumour itself is neither unequal nor knotty, nor does it terminate in a point; it is soft, and gives the sense of fluctuation; when examined with the hand, we found that it was slightly attached to the subjacent parts, but moveable; it does not impede the action of the muscles, for the child can walk freely, &c. It is transparent to the light of day; when a candle is employed, the whole extent of the tumour presents a clear appearance, like that of a fresh egg, being semitransparent and a little rosy.

What is the nature of the tumour in the present case? The first idea which would naturally present itself to the surgeon, on seeing a transparent tumour in this part of the body, is that of an hydro-rachis (spina-bifida); the age of the child (three years and a half) is not an objection to this idea, because we know that infants affected with this disease may grow up and reach the twentieth year, or even more. Camper has seen examples of this kind, where the person lived to the age of ten, fifteen, twenty years; but the tumour of our patient differs from hydro-rachis in three essential characters:—

1st. It is not placed on the median line; now spina-bifida always presents itself on the median line, between the vertebral spines, of which it arrests or prevents the development.

2nd. We can feel the spinous processes of the sacrum and vertebræ under the skin, intact, and without any trace of separation.

3rd. The lower extremities are fully developed, and the child has full command of the muscles which move those parts.

The tumour then does not depend on a spina bifida. Is it an hematocele? No. The tumour is transparent; the integuments covering it are of the natural colour, neither bluish nor irregular; there is no discoloration, nor *bruit de soufflet*.

It is not a steatoma, whether encysted or not encysted; the clearness of the contents decides this. A lipoma, composed of a fluctuating kind of fatty matter, might assume something of the appearance of the present tumour; but these lipomata are not very prominent; besides which, from the nature of their contents, they are necessarily opaque.

Reasoning in this manner by exclusion, and also from the positive characters of the tumour, M. Lepelletier pronounced it to be "a unilocular serous cyst." On its inferior part may be remarked two little cicatrices, white, firm, and solid, separated two or three lines from one another, as if a seton had been passed through the parietes of the tumour; this may assist in the diagnosis, for a lipoma would not have thus opened and closed itself spontaneously. The persons who brought the child to the hospital were examined as to the causes of these marks, and declared that the child had never undergone any operation, and that, moreover, they existed at the time of his birth; hence we may conclude that the

cyst was ruptured spontaneously while the infant was in utero, then cicatrized, and again became developed after birth. As to the *prognosis*, the tumour at present is not accompanied by any danger; it has never caused any inflammation or accident; however, its volume is troublesome, and will certainly increase if nothing be done. It should have been remarked that the child's head is normal, the fontanelles closed, and that he walked at twelve months; the thickness of the cyst, its semi-transparency, and the length of time it has already existed, leave very little hope of obtaining resolution: however, as the case is not urgent, discutient frictions, with mercury, iodine, compression, &c., might be tried for 15 days, and if no benefit be derived, an operation might be had recourse to. Were the latter dangerous, we might hesitate to recommend it, but it is simple, easy, and in general followed by no accidents. Now which is the best method of operating? (Here M. LEPELLETIER examined, successively, simple incision of the cyst, its dissection and removal; the seton; and incision, with the introduction of charpie; he discussed each, and pronounced his opinion in favour of puncture with a trocar, followed by irritating injections, as in hydrocele. M. LEPELLETIER had already treated in this manner successfully two young patients affected in a way similar to the case before him.)

Second Patient.—FRACTURE OF THE SKULL.

M. LEPELLETIER's second patient was a carpenter, 25 years of age, Salle St. Marthe, Hotel Dieu. This was a strong young man, of a sanguineous temperament, who had fallen from a scaffold the evening before on a heap of stones, and was brought to the hospital in a state of coma, having struck the back of the head against a stone. The patient was not drunk at the time of the accident, nor ever subject to epilepsy. He was immediately bled by the interne on guard, but without the effect of restoring him to consciousness. Yesterday he was unable to swallow any drink; this morning he could swallow a little fluid, but the impossibility of deglutition soon returned.

On examination, the following appearances were observed: a slight wound over the eyebrow, without denudation of the bone, or fracture; another contused wound, situated near the root of the nose, inclining somewhat to the left side, and penetrating to the bones of the nose, which were fractured. Evidence of a violent contusion on the occiput; there was little elevation of the integuments covering the injured part, but there was a good deal of blood extravasated under the skin. The most careful examination could not discover fracture, or any depression on the surface of the occipital bone. The patient has discharged by the mouth some blood. M. LEPELLETIER concluded that the fluid came from the nasal fossæ, not from the chest, as it was dark and in clots. The eyes of the patient were fixed; the pupils very much dilated and immoveable; the pulse oppressed and slow; the respiration stertorous; the limbs on the left side of the body, but principally the leg, are affected with an involuntary motion, as if to throw off the coverlets of the bed. The right side of the body remains immoveable, and the skin seems insensible when pinched. One phenomenon is particularly worthy of notice, viz., that when the convulsive motions on the left side of the body are most strongly marked, the right leg becomes stiff like an iron-bar, and does not lose this tetanic condition until the access has passed away. The right arm does not participate in this clonic spasm. Finally, the patient has not had any involuntary excretion of fecal matter or urine, nor does he present any trace of contusion or injury on the vertebral column or elsewhere, except those pointed out. How are the symptoms which this patient presents in so marked a manner to be explained? Simple contusion of the brain does not act with such quickness or energy; there has evidently been a concussion of the organ, but it should be remarked that the effects of concussion are only temporary; and, in fact, this may have been observed in the present case, as the patient was able to swallow drinks for some time on the morning after his accident. This was a temporary alleviation, however. The symptoms returned with increased energy, and we are compelled to admit the agency of some new cause. What was this? Doubtless compression of the cerebral substance, arising from an effusion of blood, and as this effusion increases, the accident depending on it will be augmented to the death of the patient, which cannot be very far distant.

Let us now, said M. LEPELLETIER, endeavour to fix the precise seat of the sanguineous effusion. For this purpose, we must consult the functional symptoms; the eyes are fixed, the pupils large, and immoveable; hence most probably the compressing body is placed at the base of the brain, and acts upon the origin of the optic nerves; besides, the paralysis being confined to the right side of the body, shows that the effusion has taken place into the opposite side of the brain; and hence it may be concluded that the shock received by the blow on

the nose determined an effusion of blood into the left hemisphere.

The phenomena exhibited by the superior and inferior extremities might also be analyzed and brought to assist in discovering the seat of the hemorrhage, but this is a point of pathology so much disputed and so very little fixed that the speaker did not consider it worth dwelling upon. Although the right side of the body is paralytic, yet from time to time the right lower extremity exhibits clonic contractions, which cannot be explained by compression of the brain. Here we are compelled to admit some irritation of the brain, or to refer, perhaps, to a laceration of the cerebral substance.

The *prognosis*, in the present case, is of a very grave nature. However, the fact of cure, quoted by LE DRAN and others, in cases as formidable as this is, does not permit us to say that death is inevitable. Should the patient escape, which is extremely improbable, he will recover in a very slow manner.

The external wounds and contusion upon the occiput require merely a simple dressing. When the concussion was recent, it should have been treated by powerful revulsives, to restore the functions to a certain degree of energy. After this, general bleeding might have been employed; but in the present stage the effects of the concussion are gone off, and it remains for the surgeon to combat with all his art the effusion of blood which already exists, and the inflammation of the brain or its membrane, which may probably come on. The first indication is to abstract a sufficient quantity of blood from the arm, and this operation may be repeated with advantage in case the pulse gets up; but should that be pushed too far, an excellent means of checking the effusion is the application of cold lotions, but particularly ice, to the head; it is, however, essential to remember that the cold should always be kept up to the same degree; for the application of cold in an intermittent manner is more dangerous than useful, on account of the reaction which it is likely to excite. These means may be aided by the use of revulsives to the lower extremities, such as mild sinapisms, blisters, &c. Finally, the patient, when he can drink, should take some acidulated draught, and we may act on the intestinal canal by laxatives, &c.

The patient, who was the subject of this lecture, died on the following day at the *Hôtel Dieu*. On examination, a fracture was found running along the whole length of the bone of the skull. It will be seen by a reference to the lecture, that M. LEPELLETIER forgot to mention the probability of such a fracture, and also neglected to speak of the trepan.

LECTURE BY M. VELPEAU.

(*July 1st.*)

First Patient. — URINARY FISTULA IN THE LUMBAR REGION.

THE first patient of whom M. VELPEAU spoke was a young man, 30 years of age, lying at the Salle St. Marthe, *Hôtel Dieu*, and who has been affected for the last nine months with a urinary fistula of the lumbar region, situated a little above the false ribs on the right side, and external to the lumbo-dorsal mass of muscles.

This patient is a watchmaker, enjoying generally good health. Nine or ten months ago he was thrown down by a cabriolet, and received a shock on the point which is now the seat of fistula. He paid, however, little attention to the accident, did not suspend his ordinary occupations or work, and the effect of the injury seemed to be dissipated, when three weeks after, in consequence of some effort which he made, pain came on in the part and extended downward to the flank; a painful tumour was soon developed, and in a short time acquired the size of one's fist. This swelling was opened by the bistoury, and gave discharge to a thick dark matter, mixed with pus. On the ninth day urine issued through the wound, which has never closed since, though every means has been tried, such as compression, sea-baths, &c. The fistulous orifice continued, but has been very much diminished in size.

On examination to-day, we found on the right side of the lumbar region, immediately above the last false rib, and in front of the sacro-lumbar mass, a small fistulous orifice, round, puckered, and about a quarter of an inch broad at its superior part; and, lower down, another orifice, somewhat smaller. The stylet penetrated directly from behind forwards, as if it would enter the patient's abdomen. Though turned in every direction, it was always arrested backwards and upwards. The instrument, which touched here and there some slight bridles, penetrated as far as two inches and a half. M. VELPEAU was unwilling to push it further for fear of making a false route

The wound discharges daily a quantity of clear colourless fluid, having the peculiar odour of urine, and staining the linen like that liquid. The quantity is sometimes considerable, even so much as a

pint; a circumstance, rather remarkable is, that the patient affirms he makes the ordinary quantity of urine by the urethra. The urinary organs did not exhibit any symptoms of disease previous to the accident; the patient never passed blood in his urine, or experienced pain in the bladder, retraction of the testicle, &c.

Here M. VELPEAU entered at length into the differential diagnosis of the disease; it did not, he said, arise from a sanguineous tumour, for the patient had not fallen upon the flank; besides, the swelling did not immediately follow the fall, but came on a long time afterwards.

It was not an aneurysm. Was it an abscess, idiopathic or symptomatic? No; for when the contents of the tumour were discharged, there came out a darkish matter mixed with urine, but no pus. To show how difficult it is sometimes to decide on the precise cause of these abscesses, M. VELPEAU here quoted a case which he had seen in 1826, in which the abscess, opening through the lumbar region, had its origin in the pleuræ. But in the present case there is no symptom of caries of the spine, or pleuritis. The primitive accident has, probably, been a lesion of the organ secreting the urine, or of the ureter. M. VELPEAU inclined more to the former opinion, because were the ureter injured, the quantity of urine carried daily into the bladder would be diminished. There is also another important test, which he was unable to have recourse to, but which would have assisted considerably the diagnosis in this matter, viz., whether the fluid which was discharged by the fistula presented the character of perfectly-formed urine, or was merely that turbid incomplete kind of urine which distils from the mamellary processes of the kidney.

The affection in the present case is not accompanied by any pressing danger, because the patient has laboured under the disease for a great length of time. Now there is nothing to be apprehended except an obstruction or irregular obliteration of the fistulous orifice, giving rise to infiltration of urine, inflammation, and extensive abscess, &c.; however, the long existence of the fistulous traject, is a guarantee against any accident of the latter kind. Although, as was said, the case is attended by no danger, yet there is a disgusting infirmity which prevents the patient from working, which keeps up a constant excoriation, causes depression of mind, &c.; hence, although a cure is hardly to be expected, we must do all we can to relieve. The hygeienic means are few and simple; diet; compression (this has been tried for a length of time with great benefit, but without closing the fistula); stimulating injections. We could not attempt with safety to close the fistulous orifice by means of suture, or the taliacotian operation.

Second Patient.—FRACTURE OF THE RIBS. EMPHYSEMA.

The second patient, a goldsmith, sixty-five years of age, is a man of good healthy constitution; he has never been attacked by any severe disease, although he has inhabited Paris for a great length of time. He has merely experienced some pains about the loins. Yesterday he was struck violently on the left side of the chest by a bull, who threw him on the ground; there are also some contusions on the legs, but these are of no consequence. The patient was bled immediately, and as he was unable to get up and walk, he was brought to the hospital. At present there is neither spitting of blood, nor any difficulty or oppression of the respiration. The patient does not cough or experience any pain in the chest. The lungs appear to be sound when tried by auscultation and percussion; externally, from the angle of the left scapula to the crista ilii, there is a line of tumefaction, of a blueish colour, easily depressed, preserving the mark of the finger, and exhibiting the crepitation characteristic of a gaseous infiltration; hence there is evidently a mixture of air and fluid; an effusion of blood, and an emphysema; besides, two, or perhaps three, of the ribs on the left side of the chest, have been fractured, probably the 5th, 6th, and 7th. The crepitation and mobility may be readily distinguished; as to the precise number of ribs fractured, it is of no great consequence to decide this point, either with regard to the result or the treatment. Our first business is to ascertain whence comes the emphysema in the present case? Emphysema in general depends on some lesion of the air tubes, giving rise to a communication between the interior of the lungs and the exterior; but sometimes this affection may be produced when the injury is far distant from the air passages, and is by no means a certain sign of fracture of the ribs. Thus, emphysema may come on after a violent fit of coughing, after fracture of the clavicle, &c.; and M. VELPEAU quoted a case in which a general emphysema, where the patient was blown up like a balloon, came on after a compound luxation of the foot. In cases of the latter kind the disease is not dangerous; but when emphysema depends on a direct lesion of the lung and air tubes, the consequences may be very grave; the air may be effused into the cavity of the pleuræ, compress the lung, prevent its

expansion, and threaten the patient with death by suffocation. However, our patient is not placed in this precarious and dangerous state,—a circumstance which may be attributed to several causes, either to the narrowness of the wound in the lung, or to previous adhesions between the lung and pleuræ, or, finally, because, perhaps, when the lungs dilate, the wound made into their substance is in perfect apposition with the external wound.

What is to be done to combat the emphysema? Some surgeons advise to dilate the lung as much as possible; but M. VELPEAU thinks that JOHN BELL'S opinion on this point is perfectly correct; the dilated lung resembles a bladder, whose parietes are pierced, and which permits all the air that enters to escape.

The first indication is to endeavour to produce cicatrization of the wound; this can only be done by attention to the most perfect repose. ABERNETHY advised to compress the chest by a tight bandage, to check the continuation of the gaseous effusion, and prevent the emphysema from forming; but this is a dangerous means; for if the wound in the lung be not healed, effusion of air goes on into the cavity of the pleura, and suffocation becomes imminent.

When the emphysema is very extended, we should give exit to the air by deep and extensive incisions; simple scarifications are not enough to relieve the urgent symptoms accompanying cases of this kind; besides, when the patient is blown up by emphysema, the large incisions which you think you have made are reduced to almost nothing, when the air is evacuated. In cases of extensive emphysema M. VELPEAU has made from twenty to thirty large incisions, or even more, and the patient, who seemed on the point of being suffocated, was instantly relieved.

Whenever, the emphysema is slight, we may have recourse to compression; but scarification is indispensably necessary, whenever the effusion of air is in any way extensive. If the respiration be much oppressed, or any symptoms of inflammation of the lungs come on, general blood-letting must be had recourse to at once, and repeated according to circumstances. As to the effusion of blood, which we described before, this will be absorbed, or will give rise to abscess, and require to be discharged by incisions; the fracture of the ribs is to be treated by bandage; however, it is difficult to obtain a perfect consolidation, on account of the constant motion communicated by respiration.

LECTURE BY M. BERARD.

(July 2nd.)

First Patient.—COXO-FEMORAL LUXATION.

M. BERARD'S first lecture turned chiefly on a luxation of the shoulder-joint; here chance gave him a luxation of the thigh.

The first patient, a vigorous young man, was, the evening before, walking along the edge of the river, when he was suddenly thrown down by a barrel, which was rolled from a distance; he fell upon his left hip; an acute pain was immediately experienced in this spot; the patient was unable to rise, and was brought to La Charité. As yet nothing has been done for the patient; cataplasms have been applied; repose; diet, &c.; he has not had any stool since the accident; no pain in the head or belly; the chest is perfectly sound.

When stripped of the clothes, and inclined on the right side, the left leg is shorter than the other, and not placed parallel to it; it is somewhat advanced forwards; the foot is rotated inwards, and the inner edge of the sole of the foot rests on the malleolus of the opposite side; the patient is unable to lift up his thigh; if this be attempted, the os ilcum being fixed by an assistant, and the patient's attention being drawn off to something else, longitudinal tractions on the limb are sufficient to restore the foot to its original direction, aided by rotating from within out one-fourth of a circle; however, the speaker was unable to restore the limb to its original length. As to the motions of which the extremity was capable, there was a great difference; movement forwards and inwards was easy; on the contrary, motion backwards and outwards was difficult, painful, and very limited.

The great trochanter was drawn nearer the crista ilei than on the opposite side, and posteriorly, above and behind the cotyloid cavity, may be felt a hard round prominence. The soft parts are not injured; there is some blue colour of the skin, arising from rupture of a few small vessels; the skin covering the upper part of the tibia is contused, but the patella has not been injured.

From this latter appearance, and from the nature of the chief injury, it is evident that the patient must have fallen upon the knee, and not upon the hip as he said; the weight of the body was thus transmitted through the thigh to the ground, the external and posterior part of the capsular ligament of the hip-joint was torn through, the head of the thigh-bone was forced out of the cotyloid cavity, and carried backwards and upwards, to

be lodged on the external fossa iliaca, resting on the bone, and displacing the three gluteal muscles; in all probability the ligamentum teres, as well as the capsular ligament, is ruptured.

Should the luxation not be reduced, a new articulation would be formed in the point where the bone now rests; the glutæus minimus, clothing the head of the femur, would be transformed into a fibrous tissue, and serve as a kind of new capsule; the fossa iliaca would become softened, and a little excavated to receive the head of the bone, and an imperfect joint would be formed; the patient would remain lame for life from the shortening of the limb, which would be constantly turned inwards.

Luxation of the femur may be confounded with fracture of the neck; but a little attention is sufficient to establish the differences; dislocation occurs in the young subject; fracture of the neck is rarely seen before the fiftieth year; besides, in the latter accident, the foot is almost always rotated outwards; finally, the length of the limb is readily restored by extension in cases of fracture.

Having thus spoken briefly of the differential diagnosis of fracture and luxation, M. Berard recurred again to false articulations, spoke of fracture of the cotyloid cavity, and indicated the manner in which extension and counter-extension should be made (after the English method). In attempting reduction, he prefers exercising extension in the direction given to the limb by the luxation, without explaining the reason of this preference.

Second Patient.—Phlebitis after Amputation of the Finger.

The second patient was a lock-smith, fifty-four years of age, of a good constitution, who had the little-finger of the left hand smashed against a wall by the shaft of a cabriolet; a few days after, the finger was removed in totality, by the single flap; since that time the wound has gone on badly; some portions of bone have come away; the edges have become disunited; violent inflammation has set in; four or five days after the operation, the patient was seized with severe shivering fits, and some delirium; the flap became flabby and grayish; the pus ill-conditioned, and he vomited several times; there is no cough or diarrhœa, but the patient's skin is of a dirty-yellow colour; the thumb and three fingers are considerably engorged and œdematous; but no fluctuation can be felt; the forearm, up to its middle, is slightly tumefied and red; the coloration of the skin disappears under pressure; there are no red lines ascending along the track of the lymphatic vessels, nor swelling of the glands in the axilla.

The general symptoms are very unfavourable; although the lungs are sound, there is excessive prostration of strength; tongue dry and dirty; low fever; great thirst; some pain in the left lumbar region; belly tympanitic; incontinence of urine, &c. Hence M. Berard concluded that purulent absorption had taken place; that abscess by metastasis was formed in some internal viscus, and that the patient must of necessity die; for, with the exception of two individuals treated by M. Sanson, all the other cases of this kind have been mortal. Here M. Berard took occasion to enter on the question of purulent absorption at some length, and gave a good resumé of our knowledge on this point, passing in review the opinions of Barry, Dance, Cruveilhier, Dupuytren, and others. We regret our space does not permit us to notice at length this doctrine, as it differs essentially from that followed in England. The treatment is confined to palliatives, for a radical cure cannot be hoped for. However, tartar emetic, in strong doses, seems to have done more good in cases of this kind than any other medicine.

LECTURE BY M. SANSON.

(*July 3rd.*)

First Patient.—Spots on the Cornea.—Fracture of the Lower Extremity of the Radius.—Varicose Veins.

M. Sanson's two patients are at the *Hôtel Dieu*, No. 8, Salle St. Jean, and No. 41, Salle St. Marthe. The first is a man, fifty-seven years of age, of sanguineous temperament; he has generally enjoyed good health; at present he exhibits three different affections.

1st. *Spots on the Cornea.*—About twenty years ago he first perceived that his sight began to get weak; he was obliged to employ very strong spectacles when he read, and at last vision remained, though imperfectly, in the left eye only. The palpebral conjunctiva is now red and villous; the edges of the eyelid are red, but not ulcerated; the ocular conjunctiva is unaffected. Both transparent corneæ exhibit examples of an ephelium, with slight opacity. On the left side the opacity is not extensive, but, on the right, it interrupts the vision. The iris is but little sensible to the action of light. The length of time which this affection has already existed, renders it difficult to treat it with any hopes of success; the chief means which M. Sanson indicated were, local

bleeding by leeches, astringent collyria, laudanum dropped upon the spots, and foot-baths.

2nd. *Fracture of the Radius.*—The next affection which the patient exhibits is much more worthy of attention than the former. When a child, he fell from an elevated position on the left side of the body, the weight being thrown on the wrist-joint, the radius was fractured by the fall, but a charlatan who was consulted left the accident to itself, as he probably was ignorant of its nature. Inflammation of the fore-arm, with great tumefaction, set in; an abscess formed in the neighbouring cellular tissue, and opened spontaneously in three different places; after a long continuation of suffering, these abscesses healed, but the fracture always remained unconsolidated. The hand is now inclined at a right angle on its radial side, and the extremity of the radius projects internally on the external side, there is a well-marked angular depression. The existence of a false articulation in the present case is very curious, and rare, and much better for the patient than if consolidation had taken place in the vicious position of the hand occasioned by a neglect of all treatment. In fact, the patient can make a very good use of his wrist, and has even served as a volunteer, without being impeded in his duties by the state of his hand. When desired to rotate the hand, he executes the motion in the shoulder-joint, but he can pronate and supinate the member even when the arm is fixed.

Until within a very short time ago, said M. Sanson, cases of this kind were described as belonging to luxation of the wrist-joint, forwards, backwards, or laterally. I fell into the error, and described the accident as a luxation in my work on operative surgery, and in a dictionary of medicine; in this respect I followed the doctrine and authority of Boyer. Not long ago M. Dupuytren called into doubt the possibility of these luxations, and demonstrated that what surgeons generally denominated dislocation of the wrist-joint, was nothing but a fracture of the inferior extremity of the radius; since then more careful dissections have shown, that such luxations were nearly impossible. In fact, the swelling of the radius at the exterior of its anterior surface below, produces such a disposition of parts, that the axis falls on the ———.

Here, then, is one reason for fracture taking place; besides, on examining the superior range of the corpus, we see that behind there is a gliding motion, which is almost incompatible with luxation; finally, the motion of flexion and extension takes place between the second and first range of carpal bones; if to these reasons we add the resistance of the ligaments, tendons, &c., we shall have little reason to admit luxation of the wrist-joint.

M. Sanson now described in a masterly manner the symptoms attending fracture of the lower extremity of the radius, and observed that the most frequent effect of this accident, especially if neglected or ill-treated, was to impede more or less the motion of rotation; however, in the present case, in consequence of the false joint formed, the patient executes rotation in a most extensive degree, and has good use of his wrist.

3rd. *Varicose Veins.*—But the disease for which the patient was received into the hospital yet remains to be noticed. Many years ago there were formed over the left ankle, and on the thigh, knotty chords along the tract of the veins, depressible, and bluish in colour. A varicose mass soon formed at these two spots; the tumours were soft, irregular, and livid, resembling much, except as to colour, a mass of leeches.

The patient is a wine merchant, and in the habit of remaining a long time in the upright posture. Some time back the varicose tumours began to occasion inconvenience; the veins above the ankle became painful; phlyctenæ were formed, and then ulceration took place; the ulcers healed and opened frequently, and, finally, have remained open for the last month. Below the right ankle there is an ulcer, a little elevated at the edges, superficial, and as large as a piece of thirty sous; the integuments surrounding it are smooth and tense, excoriated, and of a bluish tint; the discharge from the ulcerated surface is very moderate. About eight days back he experienced a sensation of heat in the varicose mass, situated on the right thigh; this part became also tumefied and red; the veins here were very dilated and flexuous, the integuments brownish, and disposed to ulcerate. The internal surface of the left thigh presents nearly the same appearances; there is a round tumour, elevated about an inch above the skin, and two or three inches in circumference; the integuments are tense and glistening, and several hard compact septa may be felt here and there.

What is the state of the veins in an affection of this kind? (Here M. Sanson traced a concise but perfect history of varicose tumours.)

The disease may be distinguished into three stages:—

1st. In the first it is confined to a simple dilatation of the veins, which are tense and a little painful, occasioning some in-

convenience when the patient observes the upright posture for any time. If you employ pressure in this case, and on the living subject, there remains sufficient contractility of the vessel to restore it to its original dimensions; and should you have an opportunity of examining the veins by the patient's death, you do not find any alteration of tissue; the texture merely appears a little more dry than is natural.

2nd. In a more advanced stage of the disease, the pain is more pronounced; there is difficulty, or at least fatigue and impediment in walking; the limbs become numbed, &c. If the blood be artificially expelled from the veins, we find their parietes thickened, transformed into tense hard chords; the elasticity is completely lost. In case the patient should die, the internal tunic of the vessels does not present any alteration worthy of notice; but the external coat is found resembling the fibrous tissue which constitutes the middle tunic of an artery, and when the vein is divided across, its mouth remains permanently open.

3rd. If the disease be permitted to go on, the veins become flexuous and knotty; they are much increased in thickness and length; the dilatation is irregular, and the fibres of the middle tunic form a hernia through the external one, as sometimes happens in the intestines.

The cellular tissue which surrounds and joins together these masses of varicose veins, becomes itself altered: it is engorged and hardened; it assumes a lardaceous aspect, and is very apt to take on inflammation and to ulcerate.

The consequences of an affection of this kind are very various; sometimes slight, at other times very dangerous or even fatal. When the inflammation extends from the cellular tissue to the veins, a phlebitis ensues, which may terminate in death. In ordinary cases the tumour merely inflames, and terminates in suppuration; the abscess opens spontaneously, or is opened by the surgeon, and pus, mixed with grumous blood is discharged. These abscesses may heal up, but the varicose mass is never completely removed, or the disease radically cured. In almost all cases there remains an induration of the cellular tissue, which is extremely difficult to dissipate; but when this induration is seated in the interior of the varices themselves, a hardened knot remains, until a new inflammation supervenes, by which it may be more or less dissipated.

In the case before us, the inflammation has been arrested, and there is no appearance of the patient's being threatened by phlebitis; indeed it is not probable that the veins have ever been inflamed, for the patient has not experienced any shivering, low fever, delirium, or pain and redness, along the vessels, &c. The prognosis is therefore favourable; under any treatment there will be some suppuration, but of a good kind, and some fibrinous masses may be expelled, but little blood; there is no danger of hemorrhage coming on, and we may dispense to treat of this accident, especially as the time presses.

It cannot be expected that the patient will be cured of all the varicose masses, for the inflammation has not extended to them all; however, a cure in some rare cases may be obtained by spontaneous obliteration of the vein. Of this M. Sanson quoted an example, and took occasion to notice the numerous cases of success obtained by M. Breschet in varicose dilatation of the scrotal and spermatic veins.

The treatment may be comprised in a few words:—leeches to prevent the inflammation from extending further; and, in a few days, when the fluctuation which already exists is more marked, the tumour may be opened with the lancet or allowed to open itself, after which, resolution will take place, and the patient's state be much ameliorated.

Second Patient.—Hare-Lip.

M. Sanson (having spoken of incision of varicose veins, excision, the treatment of varicose ulcer, &c.) turned to his second patient, a little girl two years of age, affected with a congenital hare-lip. It does not, however, present at the edges of the division that kind of reddish projection which commonly distinguishes this malformation. The affection is simple, situated, as usual, on one side of the upper lip; this is almost universally the case, and depends on the manner by which the upper lip is developed in the fœtus by three pieces, one median, the other two lateral; hence, when development is arrested, a lateral portion does not unite with the median, and hare-lip is produced. If there be such a disease as median hare-lip, it is extremely rare, and most modern authors have denied its existence; however, M. Sanson cited a case from Moscati, which he seemed to consider as authentic. The bones, in the present case, are not divided; there is merely a slight inequality between the incisors, depending on a want of perfect consolidation. The division of the soft parts is not remarkable; the superior angle adheres to the gums, as well as a portion of the upper lip itself. Here M. Sanson, having remarked that theory had little to do with a clinical lecture, gave an excellent history of the causes producing hare-lip and

division of the maxillary bone and palate; described its different species and complications, and entered into a consideration of the theory of development as applied to this malformation. In speaking of the treatment, M. SANSON also observed, that it was less the duty of a clinical lecturer to describe what had been proposed and done by others, than to detail his own method of operating, which he proceeded to do in a very clear manner. It differs nothing from the ordinary method of excising the edges with scissors, and employing the ordinary silver-bodied needles of SHARP. As to the uniting bandage first proposed by LOUIS, he rejects it as useless, except in cases of double hare-lip, or where an osseous tubercle has been removed.

LECTURE BY M. GUERBOIS.

(July 5th.)

WE can only indicate the titles of the subjects on which M. GUERBOIS lectured. Unaccustomed to his voice or very peculiar manner of speaking, we were barely able to comprehend a word here and there, and if we were rightly informed by those who did understand him, the matter was by no means worthy of reporting.

NECROSIS.—The first patient had gangrene of the foot with necrosis. M. GUERBOIS gave some common-place generalities on gangrene, caries, and necrosis, and described their causes and treatment, every now and then recurring to his patient, and repeating each proposition laid down, at least twice.

GUNSHOT WOUNDS.—The second patient was a young man, 25 years of age, who had shot himself with a pistol, in consequence of some disappointment in love. The ball remained embedded in the superior maxillary bone; excessive inflammation with suppuration came on, &c. He spoke of gun-shot wounds in general, the accidents which supervene, purulent absorption, tetanus, &c. This subject was treated by the speaker moderately well, and he succeeded in filling up his time of an hour without any of the repetitions which disfigured his lecture during the former trial.

Dr. TYTLER authorizes us to state, that during the few weeks he is to remain in England, he will, on an application from his medical brethren, inspect any cases of cholera, of the existence of which he may receive timely notice.

THE LANCET.

London, Saturday, Aug. 2, 1834.

THE introduction of a BILL into our Legislature for "amending" the "poor laws" of England, has given rise to a discussion,—an incidental one certainly,—on the state of our public charities, when amongst others, the Medical Eleemosynary Institutions fell in for their share of notice. It is not our purpose to write a criticism on the new BILL,—a document which has excited an extraordinary sensation from one end of the country to the other, although we must declare that if this Journal were devoted to the consideration of political questions, it is impossible that we could have remained silent relative to this vastly important national measure, and even now we may perhaps be permitted to observe, that having for many years past taken an active part in parochial affairs—having witnessed the condition of the labouring poor in aristocratic towns,—in places devoted to manufactures,—and in strictly agricultural districts,—we conscientiously believe the parties who are engaged in pushing this Bill through Parliament, are not only ignorant of the links which bind together the various members of society in this country,—are not only incapable of catching even a distant glimpse of what must be the deplorable effects of this Bill, if it should ever be enacted into a law; but that they have not the remotest conception or knowledge of those fundamental principles on which a legal provision for the poor is secured in that condition of society which is denominated civilized. The principle which has been advocated in Parliament by the supporters of this measure, is neither more nor less than this,—that the present generation being the owners of the soil, have it in

their power to decree, and have a right to enforce such decree, that a portion of the succeeding generation shall be deprived of the means of subsistence.

Whether such a horrible principle as this can be worked out into detail, events, possibly of a sanguinary character, will determine.

We shall only further remark, generally, with reference to this subject, that inasmuch as the *abuses* in the administration of the poor laws have been satisfactorily established and justly condemned, it is a somewhat novel mode of proceeding to *abolish* a *good* law, simply because its provisions have been *badly* administered. If the select-vestry system were annihilated, if STURGES BOURNE'S Acts were repealed, and the ancient practice restored of allowing the rate-payers to assemble in open vestry, few complaints would be heard in future of the mal-administration of the powers of the 43rd of ELIZABETH. Still, if all that could be desired would not be attainable by a resumption of the customs of our forefathers, it is morally certain that the provisions of the Bill now before Parliament cannot be enforced without producing a convulsion of society from one extremity of the kingdom to another. Do our state conjurors believe, that property can be secure in the rural districts, when it is surrounded by an enraged and starving population? If every tree were to be converted into an officer, if every gate furnished the pistol and cutlas of a policeman, the houses, the granaries, the cattle of the farmers, would suffer destruction from the assaults of *necessitous* nocturnal depredators.

The labouring men of this country have yet to learn that poverty is a crime, and that the "union" bastiles of Poor-law Commissioners are institutions in any respect preferable to the old established *county jails*, into many of which their wants, their misfortunes, and not their sins or evil doings, have but too often consigned their aching hearts and rheumatized limbs. If the poor man is to be coerced while the opportunity of employing himself usefully is withheld from him, let the *occupiers* of the soil be coerced at the same time into making a judicious use of that land which the law entitles them to hold. In short, the labouring population should demand a revival of that statute which in olden times required that every land-owner should till *a third* of his estate, or in failure thereof forfeit that third to the public. Unless some such provision be made, we would ask in what manner this Poor-law Amendment Bill is to remedy the distress of the rate-payers in towns, or mitigate the miseries of the labourers in the rural parishes, in some of which, close to this metropolis, nearly the whole of the land is in a state of pasturage. In one parish, not ten miles from Oxford-street, out of *forty-eight* agricultural labourers, *twenty-six* within the last two years were employed *at one time* in working on the roads of the parish,—roads which, taken at their utmost limit, did not extend two miles and a half. As the supporters of the cruel Poor-law Amendment Bill are also, as is perfectly obvious from the tenor of their arguments, *Poor-law Abolitionists*, if they were to be asked, what is to become of the able-bodied labourers, if the farmers *will not* employ them on the land, their answer, to be consistent, would be, "They must starve." It should be remembered that the strength of the labourer is *his* property, and that when goaded to desperation, the combined multitude of labourers may feel disposed to inquire, why their wealth is the *only* property in the state which is denied the protection of the law. The force of such an inquiry will not be lessened when it is borne in mind that that nation must speedily become poor in everything, if it

be not rich in the numbers and vigour of the industrious portion of its community.

The Bill was brought forward in the House of Peers, by the LORD CANCELLOR, who, in the course of a discursive speech, directed attention to the influence, on society, of the institution of charitable establishments, and condemned, in terms of unreserved severity, hospitals for foundlings, hospitals for ordinary diseases, hospitals for infants, and almshouses for succouring the aged and decrepid,—restricting his unqualified approval at the same time to "hospitals for accidents," and partially approving of "public dispensaries." As the whole of the hospitals of this metropolis, and we believe those established in all the country towns, are ever available to the victims of accidental injury, it is not necessary that we should deplore the non-existence of an institution, the beneficial range of which should be limited to the admission of patients suffering from the effects of accidental calamities. The conductors of the existing institutions exercise a praiseworthy liberality in rendering their establishments at all times subservient to individuals suffering from disasters which no act of prudence could avert.

Fully, then, do we concur in the LORD CHANCELLOR'S approval of *Hospitals for Accidents*. But we entirely dissent from his statement with reference to the utility of *Dispensaries*; and how his Lordship, in one and the same breath, could commend those institutions, and condemn establishments which are founded for the succour of infants and aged persons, we are utterly at a loss to comprehend. Was his Lordship a member of the "UTILITARIAN SOCIETY," the members of which body, a few years back, were in the habit of holding their meetings at the house of the late JEREMY BENTHAM? We are prompted to put this question by a recollection of two circumstances. First, because it was contended in that Society that *all* poor-laws were injurious to the community, and that parents were justified in destroying those of their infants which could not be reared without detriment to the senior members of the family; and, secondly, because we know that one of the members of that Society was also one of the Poor-law Commissioners, upon whose report the Bill now before Parliament is acknowledged to be founded.

But passing over the questions relative to charitable institutions for alleviating the distresses connected with the two states of childhood, we would seriously ask the CHANCELLOR if he have ever taken the trouble to inquire into the mode of instituting, or the system of managing, a single one of those "public dispensaries" which he has eulogized in his speech.

During many years past we have been required, in the discharge of our duties as medical journalists, to direct a vigilant eye towards the medical charities of this metropolis. We have marked the conduct of their managers,—the conduct of the life and annual subscribers,—of the medical men through whose instrumentality they have been set in motion,—of the medical officers who have been elected to fill vacant places in them, and the means by which their elections have generally been secured,—the description of persons who have applied for relief, and of the parties who have supplied the patients with "dispensary orders,"—and we can most truly and sincerely affirm, that of all the corrupt and worthless establishments miscalled "charitable" which exist in this country, there is not to be found the equal of the "dispensaries" in point of baseness and delusion. They are destitute of every trait of charity; they are governed either by incompetent or sordid hands; and whatever influence is exercised by them is against prudential

feelings, and, consequently, in favour of improvidence, — against virtue, and in support, therefore, of vicious practices. Being nuisances alike to the members of the medical profession and the best portions of the community, hundreds of gentlemen who formerly upheld them have withdrawn their subscriptions, and it has been resolved at public meetings of medical practitioners, that to hold any professional intercourse with some of the physicians and surgeons who occupy offices in them, would be degrading to the character of the profession.

The commendation, then, of Lord BROUGHAM, has been uttered at a time when it is most likely to be of service to the community. After an approval of dispensaries, emanating from such an eminent and influential source, will the chairman and members of the Parliamentary Medical Committee allow the dispensaries to escape, without instituting with regard to them a searching and wide-spreading scrutiny? After the great hospitals, they become next in importance with regard to attendance on medical practice in the "regulations" of the Apothecaries' Company. Thus, it is pretended that they not only confer benefits on the poor, but afford efficient instruction to medical students in the various departments of the curative science. That they are beneficial to the poor under the existing arrangements we boldly deny; that they could be made advantageous to students in medicine we admit, but not without a total change of management, and an entire subversion of the principles which are now recognised and acted on in the election of the medical officers.

Let us hope, therefore, that the profession will be furnished with an account of the public dispensaries of this metropolis from those parties who have been instrumental in instituting them, and who, possibly, have been the only persons who have profited by their maintenance out of funds collected from the charitable and humane. Connected with these establishments, should be named those rank branch-works of quackery, the "College of Health" and the "Asylum of Health," situated in the New Road or at Paddington, in the first of which MORISON, of "Universal-Medicine" notoriety, is "director," and in the last of which RODERICK MACLEOD, of "Bread-pill" celebrity, is "physician."

THE MALIGNANT CHOLERA.

To the Editor of THE LANCET.

SIR,— In the year 1818, some ship loads of deteriorated rice were dispatched from Calcutta, and in the course of commercial circulation reached the Spanish Settlement of Manilla in the Philippine Islands. As soon as this poisonous grain came into use in that quarter, the cholera in Manilla commenced its ravages, i. e. in the year 1819. The Spanish inhabitants, unaware of the real cause of the calamity, but conscious that a poison, and of foreign introduction, was producing dreadful effects amongst them, conceived that they had intentionally been poisoned by foreigners; and some French naturalists being in the settlement, and engaged in ascertaining the temperature of the springs, fountains, streams, and tanks, by dipping their thermometers into the water, an outcry was suddenly raised that this element had been poisoned by those gentlemen, and a sanguinary massacre was the instantaneous result, which dreadful transaction is known by the name of "the massacre of Manilla," in the year 1819. The striking similarity which exists between the transactions, that thus transpired in the Oriental Spanish Settlements, fifteen years ago, and the awful events that have recently occurred at Madrid, will not escape the notice of your readers; and hence two massacres, on account of the cholera, since its origin at Jessore in 1817, have taken place within the dominions of Spain.

In Hindoostan the ravages of the cholera are usually most conspicuous during the celebration of the *melees*, or great fairs, consisting of vast concourses of people assembled for religious purposes. The celebration of these festivals is accompanied by fasting, frequently, as during the observance of the Ramzan by

the Mussulmans, for a period of several days; and usually during the continuance of a *melè*, the people do not partake of food till after sunset. The consequence of this custom is, that at the time allotted for eating, the natives gorge themselves with food, and their stomachs thus becoming overloaded with aliment of a very deleterious, indigestible kind, cholera, and other bowel complaints, make their appearance, and thousands generally perish, affected with symptoms exactly similar to those produced by poison, before the *melè* has terminated.

The circumstances under which the cholera has recently appeared at Madrid, are, in almost every respect, similar to those that mark the appearance of the disease during the celebration of a *melè* in *India*. The malady, it seems, broke forth during the festival of St. Peter, and of course the inhabitants of that city, engaged in religious ceremonies, were fasting, according to custom; and then, in order to satisfy the cravings of nature, as in Hindoostan, having suddenly filled their stomachs with bad food (for it is declared by a correspondent of the *Morning Herald*, that the markets of Madrid are filled with unripe fruit and bad food), many of them perished, and precisely in the same manner as, over and over again, has happened in India.

It will not, Sir, be denied that the markets of the European Peninsula are, at this moment, filled with deteriorated rice from the East Indies. That rice must inevitably find its way to the places where troops are assembled, and, accordingly, having done so, we are told that the plague has reappeared at Smyrna. Is, Sir, this circumstance not deserving of most profound attention? And ought not every precaution which the faculties of man can suggest, to be adopted to prevent the poisonous rice in the shape of flour, biscuit, or otherwise, gaining admission into the food of the British troops in that quarter?

In conclusion, I beg to observe, that since I last addressed you, I have had an opportunity of obtaining some information regarding the cholera cases which have lately occurred in London. This disease, I am decidedly of opinion, has been occasioned by an acrid matter, of some description or other, admitted, along with food, into the stomach. To dispute this fact, would be, according to my apprehension, to deny the plainest principles of medicine. I am, Sir, your obedient servant,

R. Tytler, M.D.

London, July 30, 1834.

NEW DENTAL FORCEPS FOR EXTRACTING STUMPS OF TEETH.

To the Editor of The Lancet.

Sir,—As I am aware of the spirit of impartiality with which you conduct your Journal, I address a few lines to you to inform you that "The Dental Stump-Forceps" which Mr. Sheppard states in your Lancet, No. 9, Vol. II. May 1834, to have been invented by him, were, in point of fact, invented and manufactured by myself. In proof of the truth of this assertion I may refer to Mr. Lemale, dentist, of St. Martin's Lane, with whom, upwards of twelve months ago, I left a small instrument, precisely similar to the one which Mr. Sheppard now claims as his original invention; excepting that, as he doubtless thought it absolutely necessary to make some alteration, however trivial, he has done so, and produced a difference which all must regard as a detriment, instead of an improvement, *his* forceps being smooth in the mouth or grip, whereas *mine* are teethed. Now, as the first object is to take the firmest hold possible of the stump, I leave it to the common sense of any reader to determine which forceps are the best, the smooth or the teethed.

It is worthy of remark, that in a letter which Mr. Sheppard has addressed to the editor of the *London Medical Gazette*, detailing *his* discovery, Mr. S. confesses that Mr. Lemale, on his conversing with him on the subject of these forceps, "immediately produced a small instrument, somewhat *similar* in principle, but differing in certain *essential points* from the one I had contemplated making; with *this*, therefore, and suggesting certain improvements to the instrument-maker, I produced a forceps," &c. &c.

If Mr. Sheppard will state what those "essential points of difference" are, I, for one, should feel obliged to him. The instruments are precisely similar, with the exception of the rough and smooth surfaces of which I have just spoken, as may be ascertained by any gentleman who feels a doubt on the subject, by applying to Mr. Still, surgical instrument-maker, Leicester-place, Leicester-square, or at the residence of,

Sir,

Your obedient servant,

James Hunter,
Surgeon-Dentist.

13, Stanhope-street, Regent's Park.

IMPERFECT CORONERS' INQUEST.—The following instance of the manner in which Coroners' Inquests are conducted in Cumberland, has been furnished to us by Mr. C. Wilkinson, surgeon, of Aspatria in that county:—"An inquest," he observes, "was held at a village distant about two miles from Aspatria, on the body of a female who died very suddenly on the 24th of May last. The medical gentleman, Mr. Poole, who was called in, was the first person who found her dead in the house; the body was discovered 'sitting on a chair,' there being no one in the house but the deceased at the time of her death. Yet, strange as it may appear, the coroner did not request Mr. Poole's attendance at the inquest." The following is a notice of the inquest and verdict, copied from the *Carlisle Journal* of May 31st:—"The same day, in view of the body of Sarah Pearson, at Westnewton, aged 28, who had the day previous been found in a room she occupied at that place, quite dead, sitting upon a chair. Verdict—'Died by the visitation of God.'" Rumours were soon spread respecting this woman's death, and various dark suspicions excited, but nothing of course was elicited at an inquest held in so imperfect a manner.

MR. PRIDEAUX'S SCALE OF CHEMICAL EQUIVALENTS.—*To the Editor of* THE LANCET.—Sir, On perusing the paper in No. 566, on the Atomic Theory, by Mr. Hiley, I observed that in his notice of scales of chemical equivalents he omits to mention the most modern and comprehensive, viz., that of Mr. John Prideaux, of Plymouth. Having found this scale extremely useful to myself, I cannot but regret, both as respects the advancement of chemistry, and the convenience of its votaries, that its name should have been omitted in a periodical of such extensive circulation as THE LANCET. I remain yours, most obediently,

A CONSTANT READER.

ST. GEORGE'S HOSPITAL.

CONCUSSION.—ERYSIPELAS.—DEATH.

A MAN was admitted under Mr. Brodie's care, labouring under symptoms of concussion, for the relief of which he was bled and purged freely with the greatest benefit, when suddenly the arm in which he was bled (the right) became tumefied and painful. To relieve these symptoms the arm was fomented and enveloped in a poultice, and saline medicines were administered, but without much effect. On the following day the painful tumefaction of the limb was increased, and the skin was covered with a vivid blush of erysipelas. It was now evident that the cellular membrane beneath the skin was affected; most probably infiltrated with serum, and to save the skin and prevent the further rapid progress of the disease, Mr. Brodie, in accordance with his usual treatment in such affections, made several deep incisions down through the skin to set the cellular membrane free; poultices were ordered to be continued, and the patient's strength supported with bark and ammonia, with the addition of wine or spirits with his usual diet if they were required. This plan was continued for some days, but without any good effect, and the man died.

On a *post-mortem* examination being made, there were found (as was to be expected) several purulent deposits in various parts of the body.

We regret to add that *erysipelas* is again making its appearance in the hospital, and the cause to which it is generally ascribed is the circumstance of the floors being so frequently washed, the permission for which has been given by the chaplain. Mr. BRODIE very properly remarked that with reference to this he considered the question more a medical than a *clerical* one.

PROLAPSUS UTERI.—SUB-ACUTE PERITONITIS.

Hannah Salter was admited into Drummond ward, under the care of Mr. BRODIE. The house-surgeon, Mr. PATTEN, was ordered to examine her (as it appeared that the duty was too delicate a one for Mr. BRODIE himself to undertake), who reported that she had prolapsus uteri, complicated with slight prolapsus of the vagina. On hearing this, Mr. BRODIE remarked, that in such cases it was usual to introduce a common pessary to support the relaxed parts, and to keep the patient quiet in the recumbent position for a certain time. All this was, no doubt, very good practice as far as it went, but in his experience, he found that the pessary commonly used (which was made of box) generally served to relax the parts; and when it was left off, why down came the uterus as bad as ever; therefore, in truth, the pessary proved of little or no service to the patient. He (Mr. B.) had been in the habit of using a pessary composed of powdered oak-bark, inclosed in a muslin bag, and made to suit the parts accurately in size and shape. The danger or benefit from the use of such a pessary consisted in the astringent nature of the

oak-bark which checked the discharge from the mucous membrane of the vagina, and kept up the uterus in its place, and gave a healthy tone to the parts, which seemed to support it (the uterus) after the pessary was left off.

Such a pessary of oak-bark as the one described was accordingly ordered, and worn by the woman for two days, when she complained of extreme pain over the hypogastric region, with rigors, quick pulse, furred tongue, and anxious countenance. Salines were prescribed for her, with leeches and fomentations externally, from which she experienced relief, still the pain continued, and she was ordered a blister. This afforded ease, but there was still deep-seated pain on pressure. The case was now decided to be one of subacute peritonitis (the uterine irritation, probably, induced by the pessary, being entirely overlooked), and was accordingly transferred to Dr. SEYMOUR.

ANOMALOUS AFFECTION OF THE HEAD.

Whilst passing through one of the new wards, Mr. Brodie came to the bed-side of a patient, the history of whose case, as we could gather it from the report read by the clinical clerk, seemed to be that eighteen months since he had fallen downstairs, and struck his head on the occiput (a scar is still visible). No permanently bad consequences ensued until October last, when his senses became impaired—a result arising secondarily from the injury. In this state of idiotcy he has remained up to the present time, and it is for the relief of this that he has been admitted into the hospital. Previous to his admission, we believe that blisters and counter-irritants were applied to the back of his neck with some relief, which however was only partial and temporary. After hearing the above particulars, Mr. BRODIE remarked that it was a case in which very little could be done. Cases would sometimes occur, in which, after an injury such as this man had received, one or more of the senses would become impaired, weakened, or lost; the sight, the smell, or the taste, would fail; this would sometimes last for a longer or shorter period, at the end of which time the last sense would be sometimes restored and sometimes not. He supposed that the cause of this was some injury happening to the more delicate and minute structure of the cerebrum, which we could neither detect nor remedy. He (Mr. B.) did not see that anything could be done for this man, and we believe that nothing was attempted.

CORRESPONDENTS.

A correspondent wishes us to inquire of Sir HENRY HALFORD, whether he would recommend the drinking of *iced-water* by a lady suffering from cramps of the stomach, after partaking too bountifully of *white bait*, and if so, whether Sir HENRY can favour the profession with the results of his experience as to the effects of such a *cooling* remedy.

S. N. No; it was intended for another correspondent. We are obliged to S. N. for forwarding the prospectus, but we find it extremely difficult to give a satisfactory opinion on the subject. If we could be permitted to give a recommendation, we would advise that a further consideration of the project should be deferred until it is seen what will be the effect of a new act of parliament on the practice of medicine, and the business of the drug trade generally.

The letter of *A Governor of Christ's Hospital* shall appear in the next LANCET. We would earnestly advise our correspondent to forward a statement to the chairman of the Parliamentary Medical Committee.

C. L. The causes are various, but mental distress is not one of them. He should apply to a respectable surgeon. The complaint may be cured easily.

Humanitas should send a statement of the case he has related, to the chairman of the Medical Committee. Although no names are mentioned, the publication of the case, as related by our correspondent, might subject us to an action for libel.

Of what use is it to notice the proceedings of such a person as Mr. R. S. RICHARDSON? Can we make those persons wiser, who are deceived by his stupid and unprofessional circulars?

We advise *Rougeur* to call on the President of the College of Physicians, and present that baronet, who professes to be such a stickler for the honour of the profession, with a copy of the circular which has been forwarded to this Journal, when we shall see what steps will be taken by the College to check the quackery of one of its licentiates.

"Jobbing in Christ's Hospital," in connexion with the "Diet Table," shall be noticed in the next LANCET.

A report of the grand dinner at *St. Bartholomew's Hospital* has been forwarded to us, but prudential motives interfere with its publication at present.

A Member of the Provincial Medical and Surgical Association.—On such a subject the members of the Association should write in their own names.

W. M. M. is a humorist,—not of the first water.